ARMY FM 10-529
AIR FORCE TO 13C7-10-171

# AIRDROP OF SUPPLIES AND EQUIPMENT

# RIGGING HEAVY ANTITANK ASSAULT WEAPON SYSTEM (TOW)

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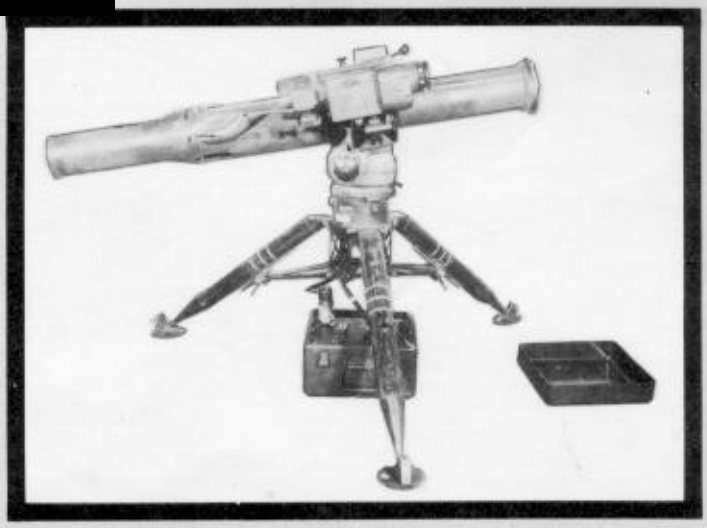

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

# C1, FM 10-529/TO 13C7-10-171

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Washington, DC, 17 March 1992

CHANGE
NO. 1

## AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING HEAVY ANTITANK ASSAULT WEAPON SYSTEM (TOW)

This change adds the procedures for rigging M151A2, 1/4-ton trucks; M416, 1/4-ton cargo trailer; and TOW weapon system on the type V airdrop platform for low-velocity and LAPE airdrops. It also includes procedures for rigging cargo bags with missiles on a 12-foot, type V platform and rigging missiles in boxes on the type V platform. Also with this change, the distribution restriction statement must be changed as shown below. Also add a destruction notice to the cover of the basic manual as shown below.

FM 10-529/TO 13C7-10-171, 16 October 1986, is changed as follows:

1. New or changed material is identified by a vertical bar in the margin opposite the changed material.

2. Remove old pages and insert new pages as indicated below:

| Remove pages | Insert pages |
|---|---|
| i through vii | i through xi |
| | 9-1 through 9-31 |
| | 10-1 through 10-20 |
| | 11-1 through 11-71 |
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| Glossary-1 | Glossary-1 |
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FIELD MANUAL
NO 10-529
TECHNICAL ORDER
NO 13C7-10-171

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 16 October 1986

# AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING HEAVY ANTITANK ASSAULT WEAPON SYSTEM (TOW)

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*This publication suspersedes FM 10-529ITO 13C7-10-171, 30 March 1981.

REMOVED: 95 MESSAGE TERMINATION OF LAPES

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# PREFACE

## SCOPE

This manual tells and shows how to rig the heavy antitank assault weapon system (hereafter called the TOW weapon system) for LV and LAPE system airdrops from C-130 and C-141 aircraft on the type II modular platform, LAPE platform, and type V platform. The TOW weapon system consists of the launcher with tracking and control units and the TOW missile encased in a launching tube. This manual is designed for use by all parachute riggers.

The TOW weapon system and its components may be airdropped in the following ways:

- An M151A2, 1/4-ton truck with the mounted TOW weapon system and two missiles are rigged on a 12-foot platform for LV airdrop.
- An M151A2, 1/4-ton truck with the mounted TOW weapon system and a second M151A2 loaded with six missiles are rigged for LAPE airdrop.
- Two M274A5, 1/2-ton trucks are rigged together on an 8-foot platform. One truck carries the mounted TOW weapon system. The second truck also carries a TOW weapon system or a load of supplies.
- The TOW weapon system is rigged in an A-22 cargo container with eight missiles. Missiles for the TOW weapon system may also be airdropped separately.
- Six missiles are rigged in an M151A2, 1/4-ton truck on a 12-foot platform for LV airdrop.
- Thirteen missiles are rigged in an M151A2, 1/4-ton truck and an M416, 1/4-ton cargo trailer on a 16-foot platform for LV airdrop.
- Thirteen missiles are rigged in an M151A2, 1/4-ton truck and an M416, 1/4-ton trailer for LAPE airdrop. An additional nine missiles or other accompanying load may be rigged on this platform.
- Eight missiles are rigged with an M416, 1/4-ton cargo trailer on an 8-foot platform for LV airdrop.
- Twelve missiles are rigged in an A-22 cargo bag for LV airdrop.
- Forty-eight missiles are rigged in four A-22 cargo bags on a 12-foot platform for LV airdrop.
- Forty-eight missiles are rigged in four A-22 cargo bags on a 12-foot platform for LAPE airdrop.
- Forty-eight missiles are rigged on a 12-foot platform for LV airdrop.
- Forty-eight missiles are rigged on a 12-foot platform for LAPE airdrop.
- Twelve missiles are rigged in an A-22 cargo bag for high-velocity airdrop.

## USER INFORMATION

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CHAPTER 1

# INTRODUCTION

## 1-1. Description of Items

The description of the items covered in this manual is as follows:

***a.*** When mounted on the unrigged M151A2, 1/4-ton utility truck (firing vehicle), the weight of the TOW weapon system with two missiles in overpacks is 2,838 pounds (reducible to 2,660 pounds without missiles). It is 133 inches long and 64 inches wide. The height of the truck is 72 inches (reducible to 57 inches).

***b.*** The M151A2, 1/4-ton utility truck (missile carrier) with six encased missiles may be used as the resupply load for the TOW weapon system. The unrigged truck with the six encased missiles weighs 2,830 pounds. It is 133 inches long and 64 inches wide. The height of the truck is 72 inches (reducible to 53 inches).

***c.*** When mounted on the unrigged M274A5, 1/2-ton platform truck (mule), the TOW weapon system with six encased missiles weighs 1,541 pounds. Its length is 118 inches (reducible to 101 inches), and it is 49 inches wide. The height of the truck is 66 inches (reducible to 48 inches).

***d.*** The M416, 1/4-ton trailer with seven encased missiles weighs 1,170 pounds. It measures 109 inches long, 61 inches wide, and 44 inches high.

***e.*** Forty-eight TOW missiles in overpacks are rigged for low-velocity airdrop.

***f.*** Forty-eight TOW missiles in overpacks are rigged for LAPE airdrop.

***g.*** Twelve TOW missiles in overpacks are rigged in an A-22 cargo bag.

*Note: EACH MISSILE IN ITS OVERPACK WEIGHS 87 POUNDS. ITS LENGTH IS 57 1/2 INCHES, ITS WIDTH IS 12 INCHES, AND ITS HEIGHT IS 12 INCHES.*

## 1-2. Special Considerations

Special considerations are given below.

***a.*** These loads contain dangerous materials, explosives and gasoline, as defined in AFR 71-4/TM 38-250. The materials must be packaged, marked, and labeled according to AFR 71-4/TM 38-250.

***b.*** A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspections.

CHAPTER 5

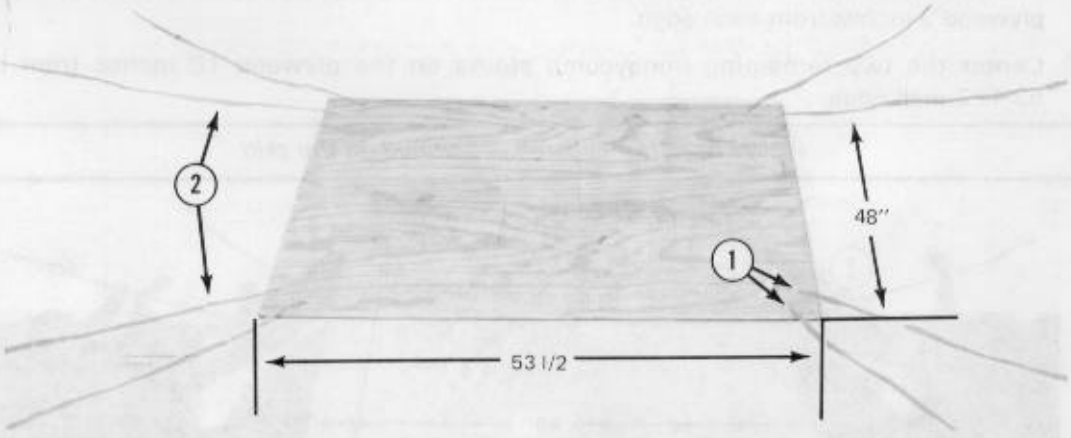
# RIGGING TOW WEAPON SYSTEM AND MISSILES IN AN A-22 CARGO BAG FOR LOW-VELOCITY AIRDROP

## 5-1. Description of Load

The TOW weapon system consists of the launcher, launch tube, and power pack. It can be rigged with eight missiles in an A-22 cargo bag for low-velocity airdrop. The load requires one G-12D cargo parachute or three G-14 cargo parachutes.

## 5-2. Rigging A-22 Cargo Bag

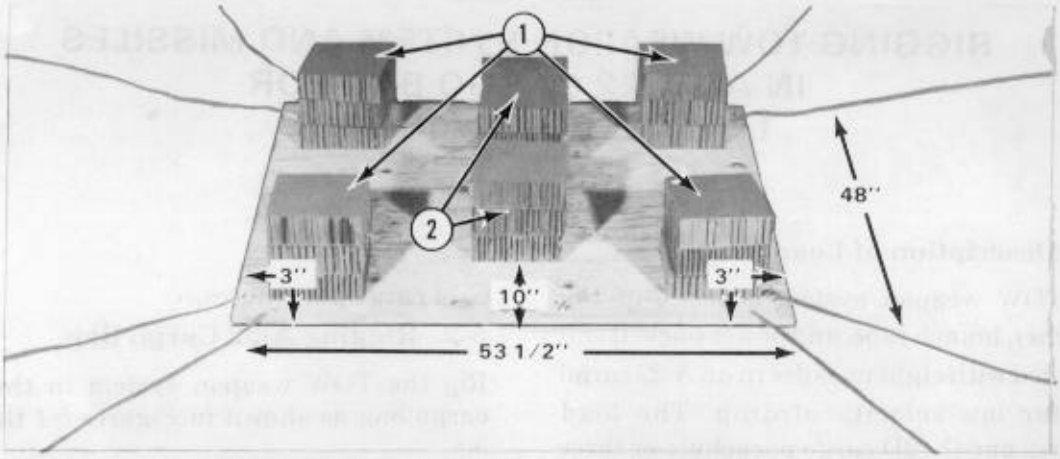
Rig the TOW weapon system in the A-22 cargo bag as shown in Figures 5-1 through 5-8.




(1) Drill two 1/2-inch holes 3 inches from each corner of a 3/4- by 48- by 53 1/2-inch plywood skid.

(2) Install an 8-foot length of 1/2-inch tubular nylon in the holes of each corner.

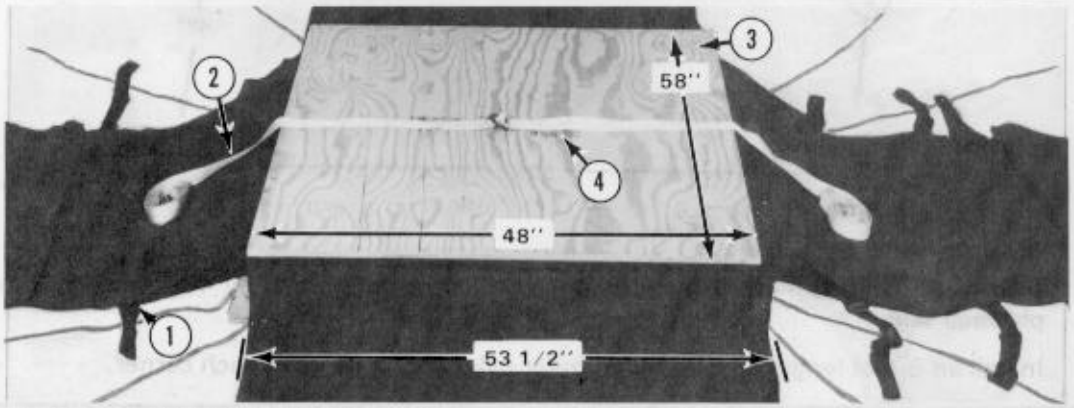
*Figure 5-1. Skid prepared*




(1) Make six stacks of honeycomb, three layers high, from eighteen 9- by 9-inch pieces of honeycomb. Glue the layers together. Place four honeycomb stacks on the corners of the plywood 3 inches from each edge.

(2) Center the two remaining honeycomb stacks on the plywood 10 inches from the 53 1/2-inch edge.

*Figure 5-2. Honeycomb positioned on the skid*



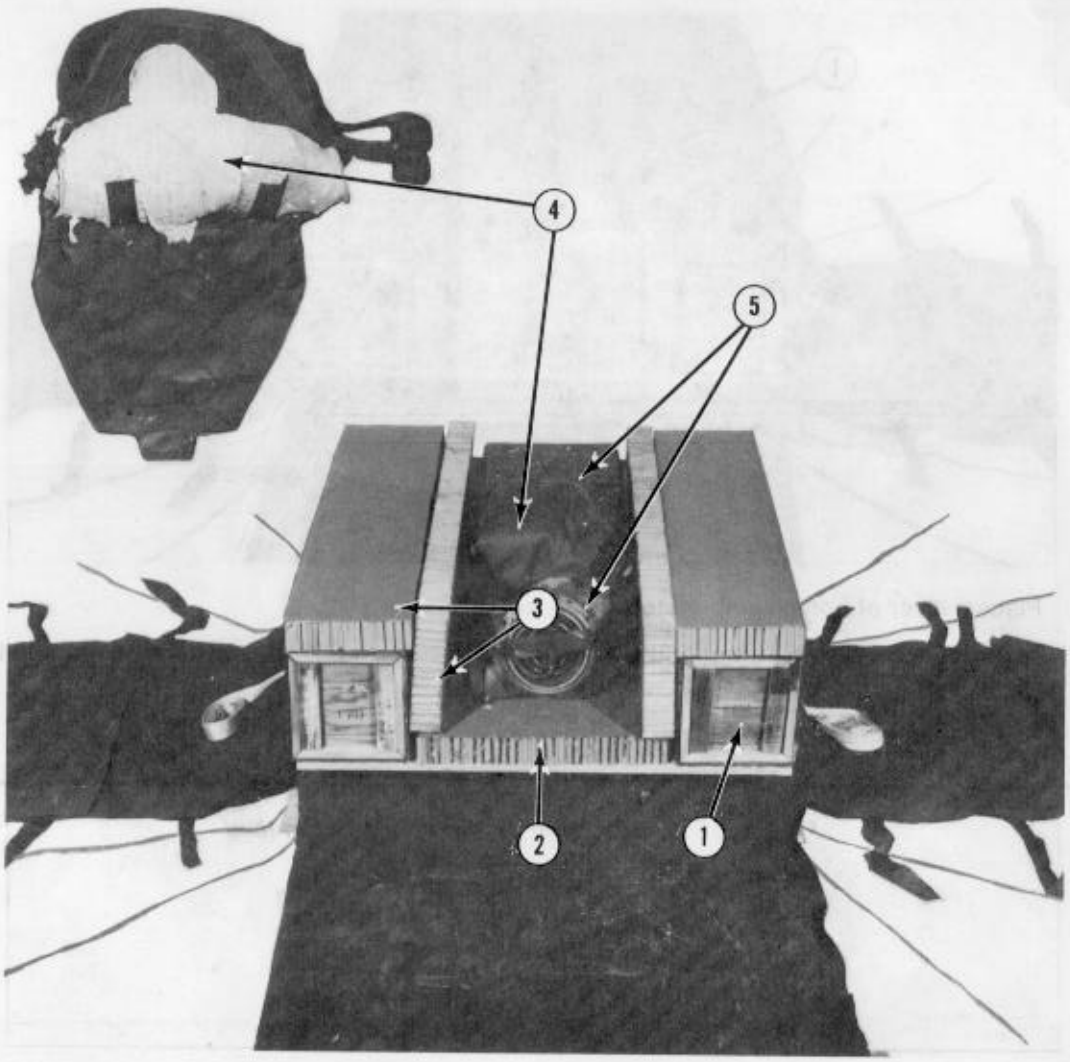

(1) Lay the A-22 sling assembly on the honeycomb stacks.

(2) Center the A-22 cover, outside down, on the sling assembly, with the long panel over the long tiedown strap.

(3) Lay a 3/4- by 48- by 58-inch piece of plywood on the A-22 cover. Position the 48-inch sides of this plywood to extend 5 inches over the 53 1/2-inch sides of the plywood skid under the honeycomb.

(4) Make a 30-foot tiedown strap as outlined in FM 10-500/TO 13C7-1-5, and lay it across the plywood.

*Figure 5-3. A-22 cargo bag prepared for the TOW missile system*




(1) Set two boxed missiles on the plywood, one even with each 58-inch edge.

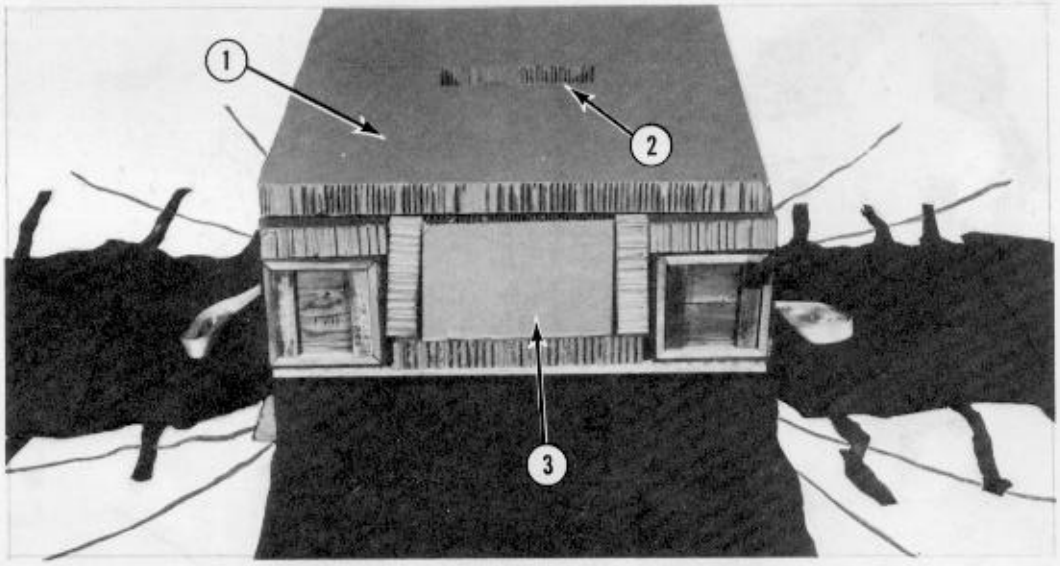
(2) Lay a 24- by 58-inch piece of honeycomb between the missiles.

(3) Place a 12- by 58-inch piece of honeycomb on each boxed missile and one against the inside of each box.

(4) Wrap the sight in cellulose wadding, and place it in its case, if available (insert above). Lay it on the honeycomb between the missiles.

(5) Set the power pack and sight traversing unit on the honeycomb with the sight.

*Figure 5-4. Missiles, sight traversing unit, sight, and power pack stowed*

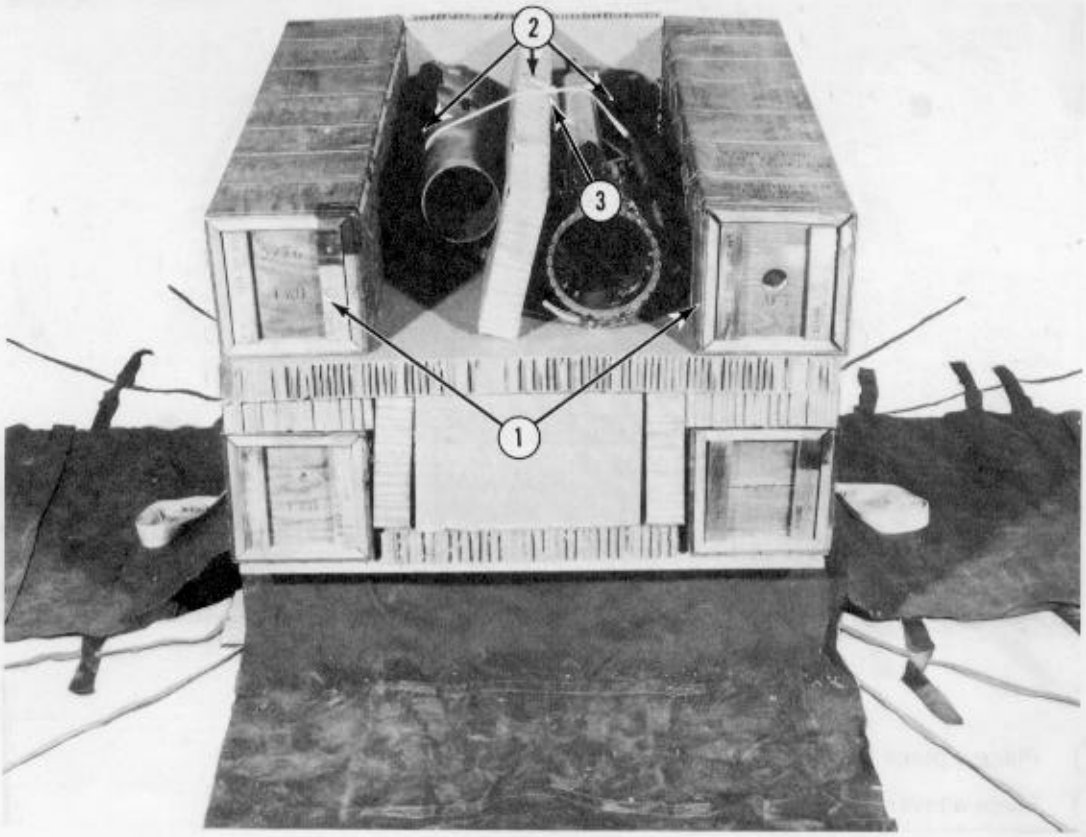



(1) Place a layer of honeycomb on top of the load.

(2) Make a 6- by 18-inch cutout in the honeycomb to keep the honeycomb from touching the sight.

(3) Place a piece of honeycomb, cut to fit, at each end of the equipment.

*Figure 5-5. Honeycomb placed on top of the load*

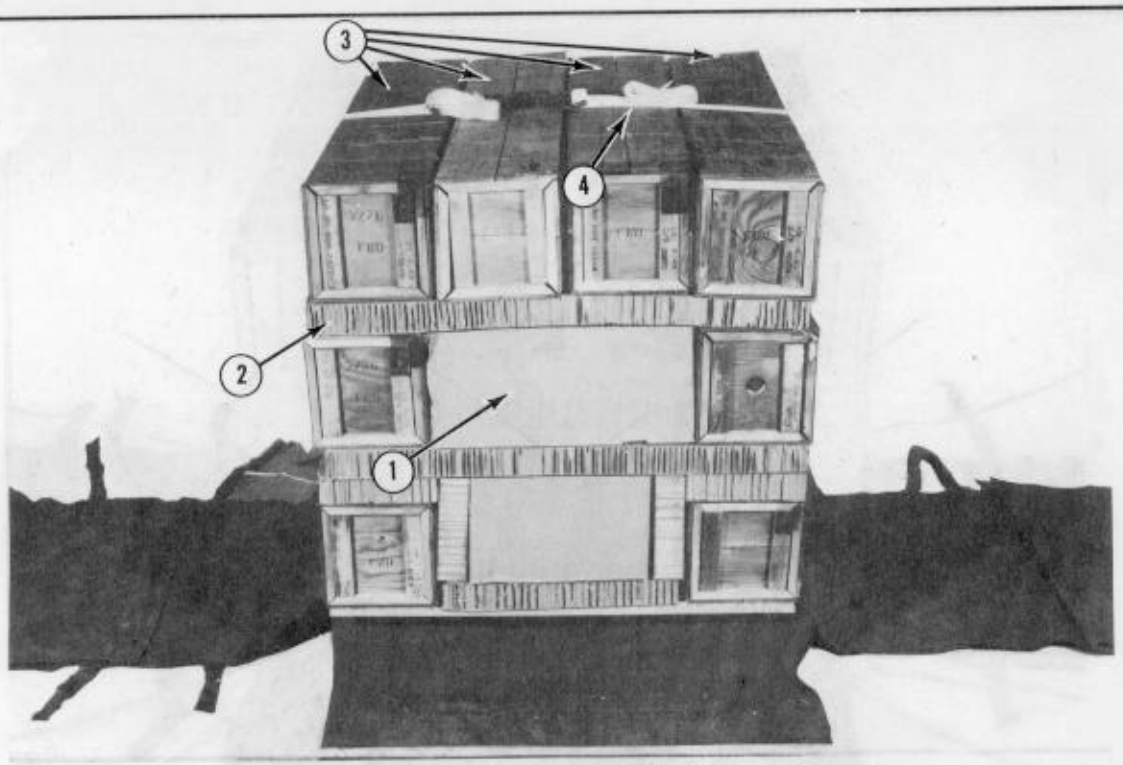



(1) Set two boxed missiles on the honeycomb even with each 58-inch edge.

(2) Lay the tripod and launch tube between the missiles. Place a 12- by 52-inch piece of honeycomb between them.

(3) Tie the tripod, launch tube, and honeycomb together with 1/2-inch tubular nylon.

*Figure 5-6. Missiles, tripod, and launch tube stowed*



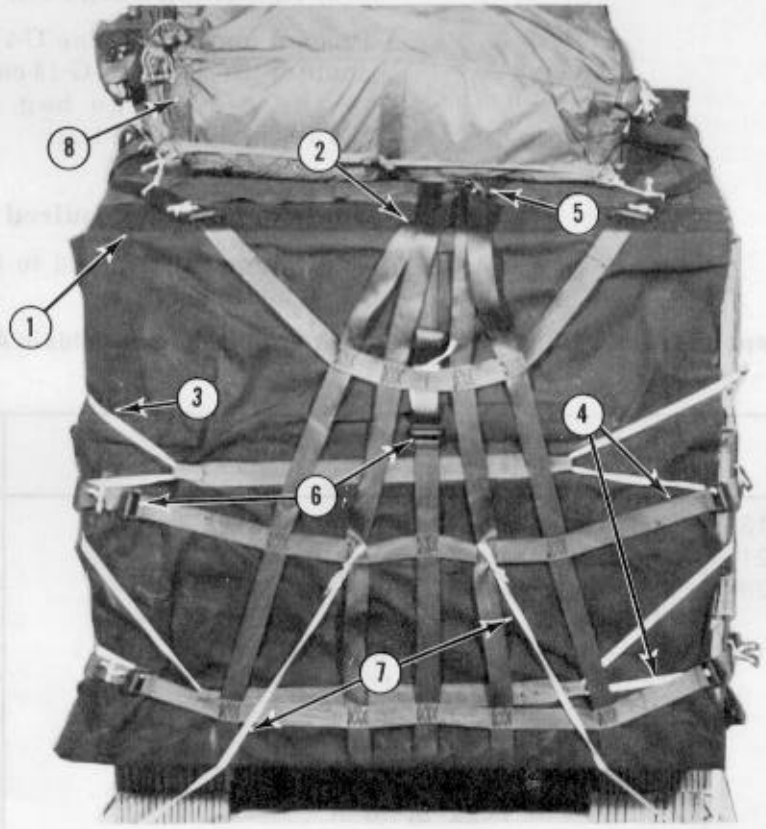

(1) Place a piece of honeycomb, cut to fit, at each end of the equipment.

(2) Place a layer of honeycomb on top of the load.

(3) Set four boxed missiles on the honeycomb.

(4) Bind the load together with the 30-foot tiedown strap, two D-rings, and a load binder.

*Figure 5-7. Load completed and bound together*




(1) Bring the A-22 cover up over the load, and fold excess material under as necessary.

(2) Pass the A-22 tiedown straps up over the load. Fasten and tighten the straps.

(3) Lace each corner of the cover through the lacing loops with 1/2-inch tubular nylon to form a figure eight.

(4) Fasten the lateral straps together around the A-22 cover. Pass the upper lateral straps across the top of the corners.

(5) Attach the suspension webs to the D-rings of the support webs with the open side of the snaps facing in. Tape the snaps to the D-rings.

(6) Adjust all straps to make the sling assembly fit snugly. Pull the suspension webs to their full height. Adjust the upper lateral straps to prevent binding the upper part of the support web. Fold all excess straps, and tape the folds or tie them with 80-pound cotton webbing.

(7) Tie the skid to the A-22 sling assembly with the previously attached 1/2-inch tubular nylon.

(8) Prepare, attach, and safety one G-12D cargo parachute (with a 68-inch cargo pilot parachute) or three G-13 or G-14 cargo parachutes to the load according to FM 10-501/TO 13C7-1-11.

*Figure 5-8. TOW weapon system rigged in A-22 cargo bag*

## 5-3. Attaching Cargo Parachutes

Prepare and attach one G-12D cargo parachute or three G-13 or G-14 cargo parachutes to the A-22 cargo bag according to FM 10-501/TO 13C7-1-11.

## 5-4. Equipment Required

The equipment required to rig this load is listed in Table 5-1.

**Table 5-1. Equipment required to rig TOW weapon system and eight missiles in A-22 cargo bag**

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| 1670-00-587-3421 | Bag, cargo, aerial delivery, type A-22 | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in: | 3 |
| | 9- by 9-in | (18) |
| | 12- by 18-in | (2) |
| | 12- by 24-in | (2) |
| | 12- by 52-in | (1) |
| | 12- by 58-in | (4) |
| | 22- by 48-in | (2) |
| | 24- by 58-in | (1) |
| | 36- by 48-in | (2) |
| 1670-00-893-2371 | Parachute, cargo, 64-ft, G-12D (or three each, G-13 cargo parachutes, NSN 1670-00-984-3535) | 1 |
| 5530-00-128-4981 | Plywood: | |
| | 3/4- by 48- by 53 1/2-in | 1 |
| | 3/4- by 48- by 58-in | 1 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 8310-00-917-3945 | Thread, cotton, ticket number 5 | As required |
| 1670-00-937-0271 | Tiedown assembly, 10,000-lb | 2 |
| 8305-00-268-2411 | Webbing, cotton, 80-lb | As required |
| 8305-00-082-5752 | Webbing, nylon, tubular, 1/2-in | As required |

CHAPTER 8

# RIGGING 12 MISSILE OVERPACKS IN AN A-22 CARGO CONTAINER FOR HIGH-VELOCITY AIRDROP

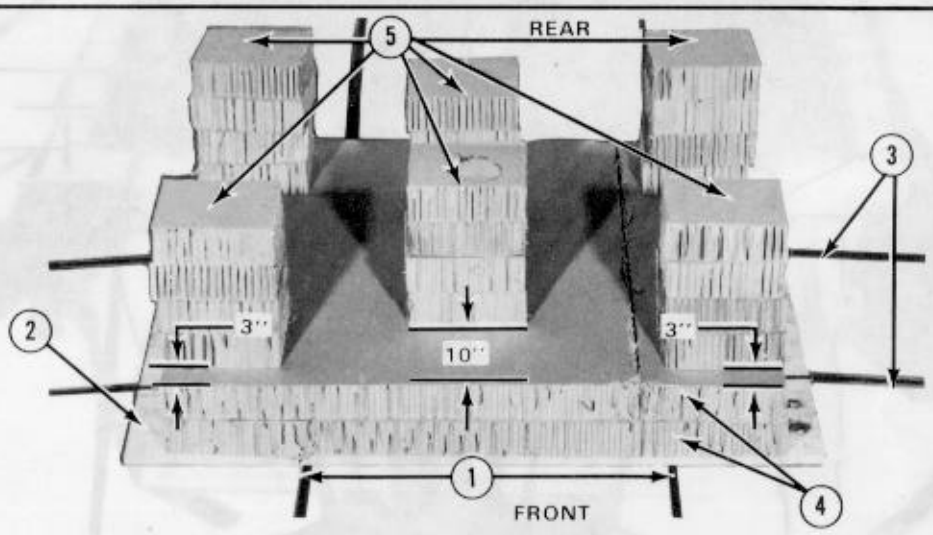
## 8-1. Description of Load

Twelve TOW missiles in overpacks are rigged in an A-22 cargo bag for a high-velocity airdrop. The load requires either one 26-foot, high-velocity cargo parachute or one 22-foot extraction parachute (packed for high-velocity airdrop). This load can be airdropped from a C-130 or C-141 aircraft.

## 8-2. Rigging A-22 Cargo Bag

Using a standard A-22 cargo bag, rig the load as described below.

*a.* Preparing Skid and Honeycomb. Prepare the skid and honeycomb as shown in Figure 8-1.




(1) Lay out two 16-foot pieces of steel strapping, approximately 40 inches from each other.

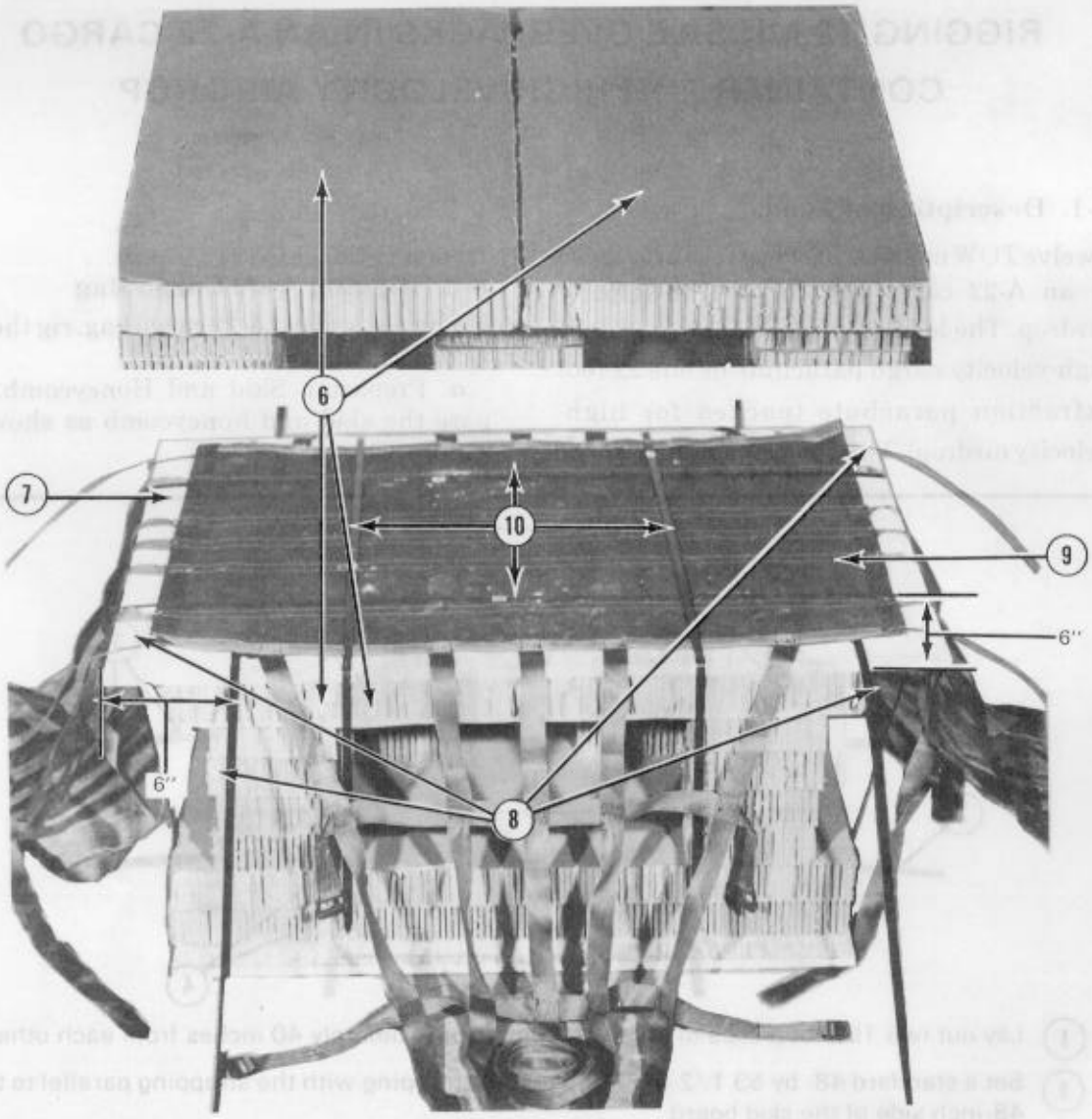
(2) Set a standard 48- by 53 1/2-inch skid on the strapping with the strapping parallel to the 48-inch side of the skid board.

(3) Lay two 16-foot pieces of steel strapping on the skid board, with the strapping parallel to the 53 1/2-inch side of the skid board.

(4) Use two 12- by 48-inch and two 36- by 48-inch pieces of honeycomb to form two layers of 48- by 48-inch honeycomb. Glue the layers together.

(5) Glue six 9- by 9-inch honeycomb stacks (four layers) to the 48- by 48-inch honeycomb stack. Glue the four corner stacks flush with the 48-inch side, 3 inches from the front and rear edge of the skid. Center the two remaining stacks, and glue them 10 inches from the front and rear edge of the honeycomb.

*Figure 8-1. Skid and honeycomb prepared*




(6) Glue two 24- by 48-inch pieces of honeycomb on top of the 9- by 9-inch stacks.

(7) Set a 3/4- by 48- by 58-inch piece of plywood on top of the honeycomb. The 58-inch side of the plywood should be parallel with the 48-inch side of the skid board.

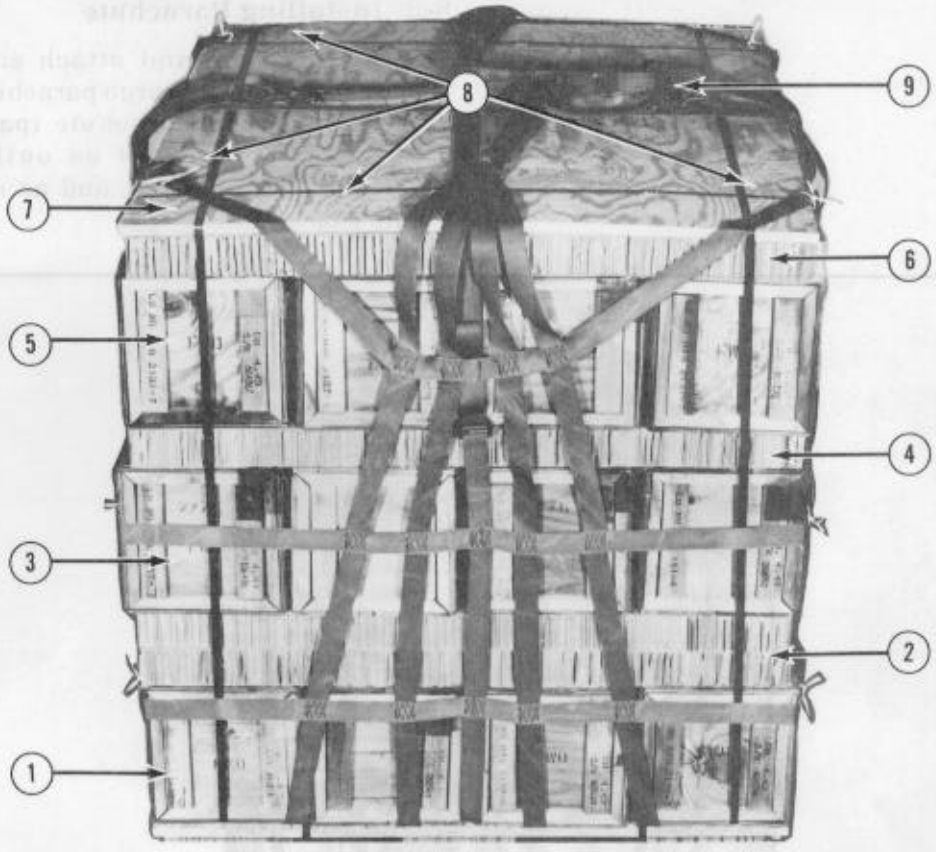
(8) Lay the second four pieces of steel strapping on the plywood, 6 inches from each edge.

(9) Set the sling assembly on the plywood and strapping.

(10) Seal the first four pieces of steel strapping on top of the scuff pad.

*Figure 8-1. Skid and honeycomb prepared (continued)*

*b.* Positioning and Securing Missiles. Position and secure the missiles as shown in Figure 8-2.




(1) Place four missiles on the scuff pad.

(2) Lay two layers of honeycomb on the missiles. Use a 36- by 48-inch and a 22- by 48-inch piece of honeycomb to form each layer.

(3) Place four missiles on the layers of honeycomb.

(4) Lay one layer of honeycomb on the missiles. Form the layer as in step 2 above.

(5) Place four missiles on the layer of honeycomb.

(6) Lay another layer of honeycomb on the missiles. Form the layer as in step 2 above.

(7) Place a 3/4- by 48- by 58-inch piece of plywood on top of the load.

(8) Seal the four pieces of strapping from under the scuff pad on top of the load.

(9) Close the A-22 cargo bag as outlined in FM 10-501/TO 13C7-1-11.

*Figure 8-2. Missiles positioned and secured*

*c.* Closing A-22 Cargo Bag. Complete the rigging of the A-22 bag as outlined in FM 10-501/TO 13C7-1-11 and as shown in Figure 8-3.

### 8-3. Installing Parachute

Prepare, position, and attach either one 26-foot, high-velocity cargo parachute or one 22-foot extraction parachute (packed for high-velocity airdrop) as outlined in FM 10-501/TO 13C7-1-11 and as shown in Figure 8-3.

RIGGED LOAD DATA

| | |
|---|---|
| Weight | 1,359 pounds |
| Width | 53 1/2 inches |
| Height | 83 inches |
| Length | 58 inches |

*Figure 8-3. Twelve missile overpacks in an A-22 cargo bag rigged for high-velocity airdrop*

## 8-4. Equipment Required

The equipment needed to rig this load is listed in Tables 6-4 and 8-1. Use the equipment listed in both tables to prepare each A-22 bag.

**Table 8-1. Equipment required to rig 12 missile overpacks in an A-22 cargo bag for high-velocity airdrop**

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| 1670-00-587-3421 | Bag, cargo, aerial delivery, type A-22 | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in: | 5 sheets |
| | 9- by 9-in | (24) |
| | 12- by 48-in | (2) |
| | 22- by 48-in | (2) |
| | 24- by 48-in | (2) |
| | 36- by 48-in | (5) |
| | Parachute, cargo, high-velocity: | |
| 1670-00-872-6109 | 21-ft or | 1 |
| 1670-00-687-5458 | 22-ft (extraction parachute packed for high-velocity airdrop) | 1 |
| 1670-00-216-7297 | Pilot Parachute, cargo type, 5-ft 8-in diam | 1 |
| 5530-00-128-4981 | Plywood: | |
| | 3/4- by 48- by 53 1/2-in | (1) |
| | 3/4- by 48- by 58-in | (2) |
| 8135-00-283-0667 | Strapping, steel, 5/8-in | As required |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 8310-00-917-3945 | Thread, cotton, ticket number 5 | As required |
| 8305-00-268-2411 | Webbing, cotton, 80-lb | As required |
| 8305-00-082-5752 | Webbing, nylon, tubular, 1/2-in | As required |

# CHAPTER 9

# RIGGING M151A2, 1/4-TON TRUCKS AND TOW WEAPON SYSTEM ON THE TYPE V AIRDROP PLATFORM FOR LOW-VELOCITY AIRDROP

## Section I

## RIGGING M151A2, 1/4-TON TRUCK (FIRING VEHICLE) WITH MOUNTED TOW WEAPON SYSTEM

### 9-1. Description of Load

The M151A2, 1/4-ton utility truck (firing vehicle), with the mounted TOW weapon system and two missiles in overpacks, is rigged on a 12-foot, type V airdrop platform. It is rigged with two G-11A cargo parachutes or one G-11B cargo parachute. This load can be airdropped from a C-130 or a C-141 aircraft.

### 9-2. Preparing Platform

Prepare a 12-foot, type V airdrop platform as described below.

**a. Assembling and Inspecting Platform.** Inspect, or assemble and inspect, the platform as outlined in TM10-1670-268-20&P/TO13C7-52-22.

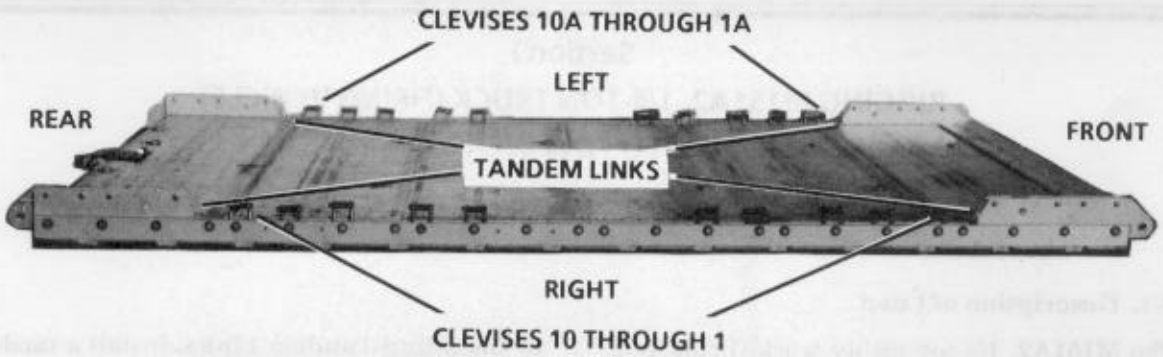
**b. Installing Tandem Links.** Install a tandem link on the front and rear of each rail as shown in Figure 9-1.

**c. Attaching and Numbering Clevises.** Bolt 20 tiedown clevises to the side rail bushings according to TM 10-1670-268-20&P/TO 13C7-52-22. Number the clevises as shown in Figure 9-1.

*NOTES:*

*1. The nose bumper may or may not be installed.*

*2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.*




Step:

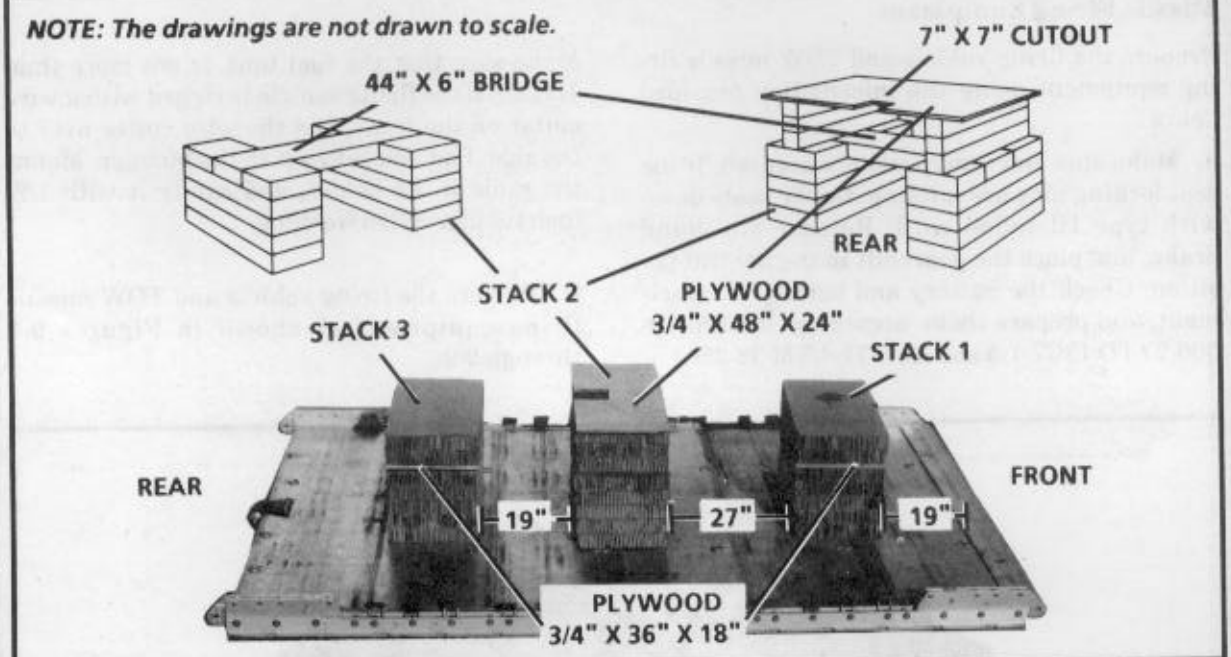
1. Starting at bushing 1 behind each front tandem link, attach a clevis to bushings 2, 3, 4, 6, 7, 12, 13, 15, 16, and 17.
2. Starting at the front of the platform, number the clevises bolted to the right rail 1 through 10 and those bolted to the left rail 1A through 10A.

***NOTE: The suspension clevises will be attached to the tandem links later.***

*Figure 9-1. Platform prepared*

### 9-3. Building and Placing Honeycomb Stacks

Build the honeycomb stacks and place them on the platform as shown in Figure 9-2.




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 19 inches from the front edge. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |
| 2 | 8 | 12 | 18 | Honeycomb | Place four pieces of honeycomb on each side of the platform an equal distance from the side rail and 27 inches from stack 1. |
| | 1 | 44 | 6 | Honeycomb | Center honeycomb over the side stacks as a bridge. |
| | 4 | 12 | 6 | Honeycomb | Place one piece of honeycomb to each side of the side stacks on each side of the bridge. |
| | 6 | 6 | 18 | Honeycomb | Center three pieces of honeycomb on each side of the stack. |
| | 1 | 48 | 24 | 3/4-inch plywood | Place plywood on top of stack with a 7- by 7-inch cutout centered on the rear. |
| 3 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 19 inches from stack 2. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |

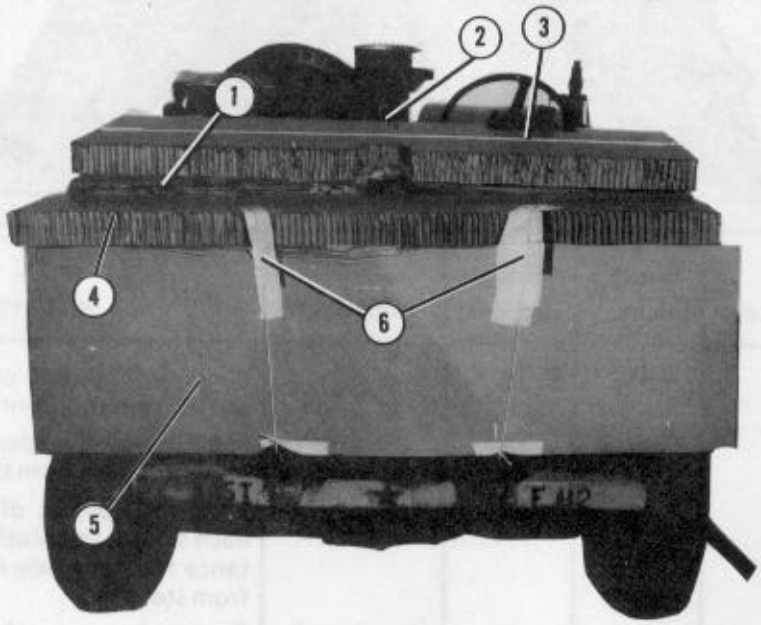
*Figure 9-2. Honeycomb stacks prepared and positioned*

### 9-4. Preparing Firing Vehicle and TOW Missile Firing Equipment

Prepare the firing vehicle and TOW missile firing equipment using the information provided below.

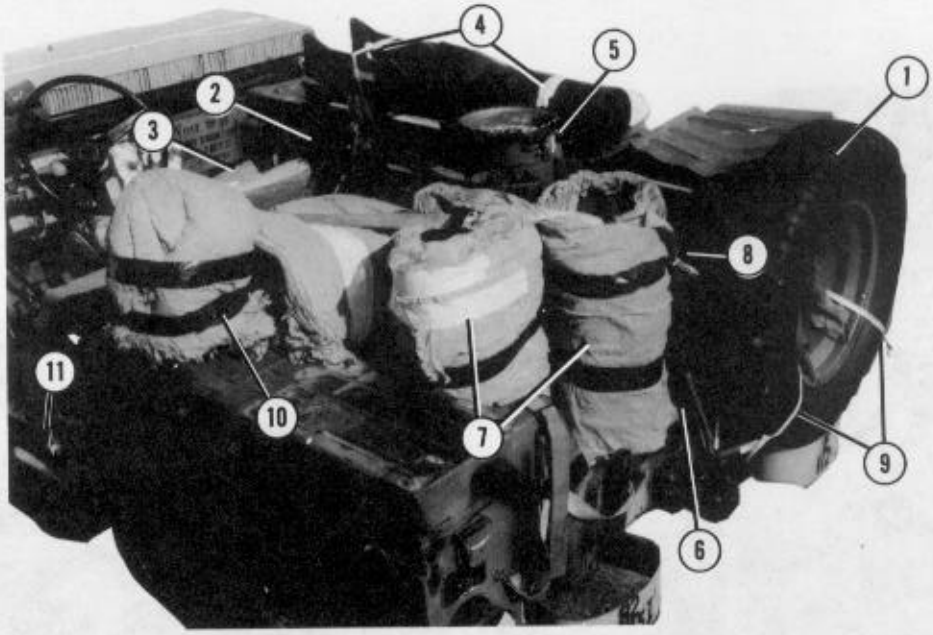
**a.** Make sure the front seats are secured. If the seat locking pins are missing, tie the seats down with type III nylon cord. Release the hand brake, and place the gearshift in the neutral position. Check the battery and battery compartment, and prepare them according to FM 10-500-2/TO 13C7-1-5 and AFR 71-4/TM 38-250. Make sure that the fuel tank is not more than 1/2 full. If the firing vehicle is rigged with a wire cutter on the front, fold the wire cutter over to the side. Pad and safety it to the bumper. Mount the radio in its holder, and safety it with 1/2-inch tubular nylon webbing.

**b.** Prepare the firing vehicle and TOW missile firing equipment as shown in Figures 9-3 through 9-9.




1. Lower the windshield onto a 2-inch-thick pad of cellulose wadding. Secure it with hold-down straps.
2. Place a 24- by 61-inch piece of honeycomb on top of the windshield. Cut or crush the honeycomb to fit over the windshield wiper motor.
3. Secure the honeycomb on the windshield with 1/2-inch tubular nylon webbing. Tie the webbing to the truck frame on each side.
4. Place a 17- by 61-inch piece of honeycomb on the hood. Crush the honeycomb to fit over the hold-down straps and blackout headlight.
5. Place a 19- by 61-inch piece of honeycomb on the bumper against the brush guard.
6. Secure the honeycomb to the hood and bumper with type III nylon cord. Tie the cord to the windshield brackets and lifting shackles. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-3. Windshield, hood, and bumper secured*




(1) Remove the spare wheel from the side mount, and bolt it to the rear mount.

(2) Fold the tripod, and place it on the truck floor under the missile rack.Safety the tripod in place with type III nylon cord.

(3) Safety the day-night sight to the passenger floor and any extra parts behind the seat with 1/2-inch tubular nylon webbing.

(4) Place the launch tube on the inside missile rack, and secure it with the straps provided and 1/2-inch tubular nylon webbing.

(5) Remove the optical sight and traversing unit. Close the ground coupling, and tape the locking handle in the closed position.

(6) Place a 14- by 21-inch piece of honeycomb and a 12- by 12-inch piece of honeycomb on the truck floor to the rear of the driver's seat.

(7) Fill a gasoline can to 1 inch below the bottom of the filler neck threads. Fill a 5-gallon water can. Pad the cans with cellulose wadding. Place the padded cans on the honeycomb.

(8) Secure the cans with a tiedown strap passed around the left rear frame of the driver's seat, through the radio mount, and through the handles of the cans. Secure the strap to the right hole in the safety chain bracket with a D-ring and a load binder.

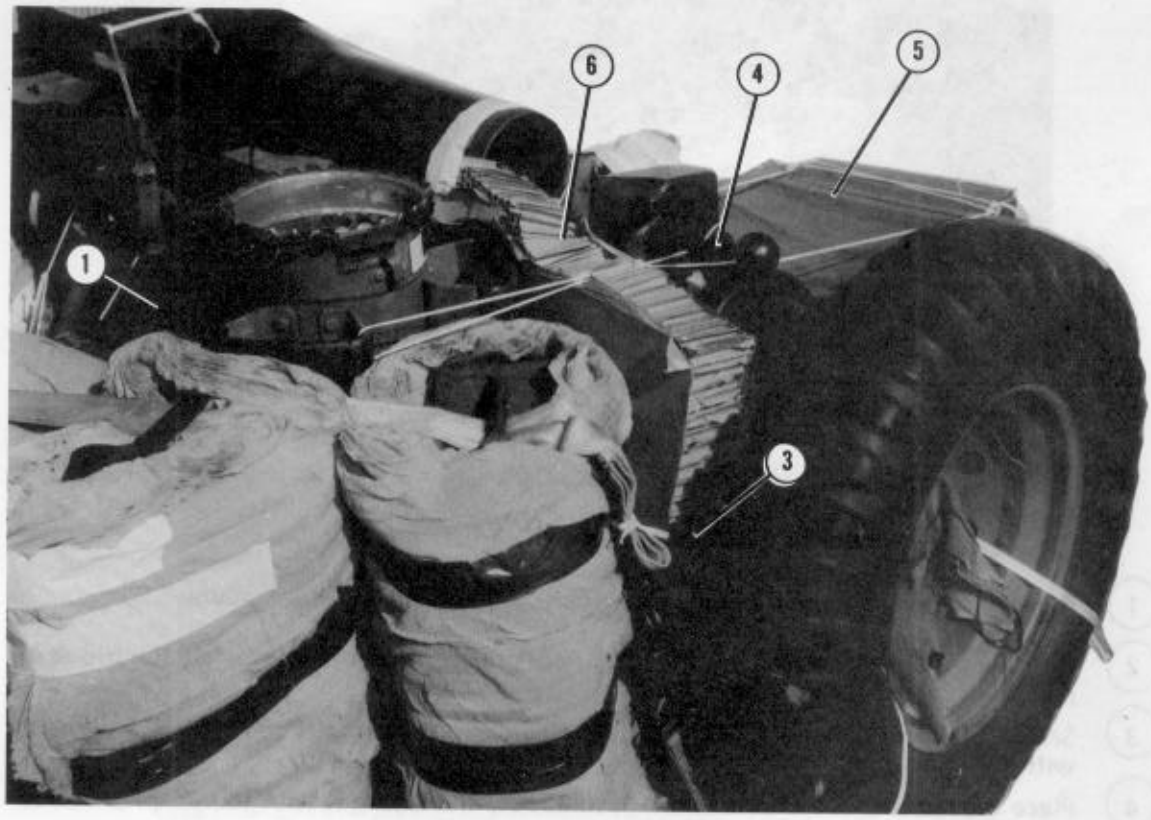
(9) Safety the spare wheel to the truck with two ties of 1/2-inch tubular nylon webbing.

(10) Pad the antenna mount with cellulose wadding, and tape it in place.

(11) Strap the ax in its bracket, and tie it securely with two ties of type III nylon cord.

(12) Pad the side mirror with cellulose wadding. Turn it down against the truck body, and tape it in place (not shown)

*Figure 9-4. Rear of truck with 5-gallon cans stowed and TOW weapon system stowed*



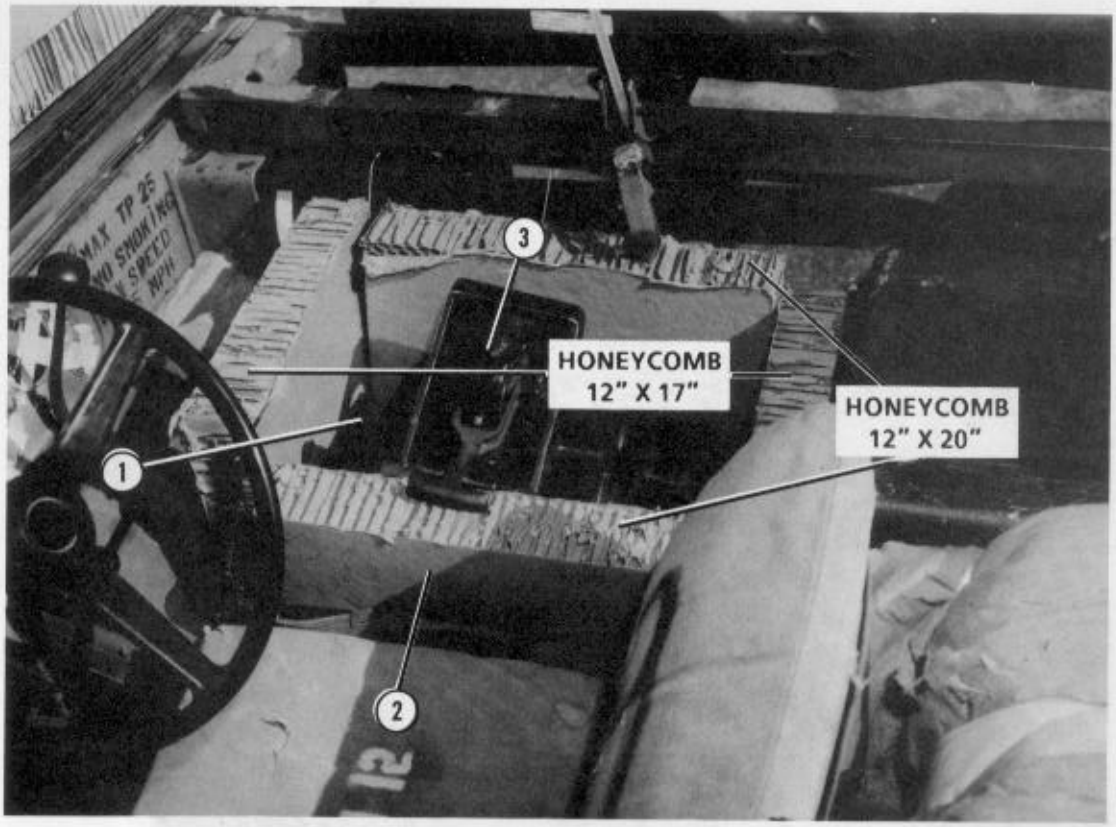

1. Place the missile guidance set in its bracket in front of the pedestal with the handle to the rear of the truck. Secure the missile guidance set with four hold-down straps (one to each corner).
2. Make two ties of doubled type III nylon cord across the guidance set to convenient places on the truck (not shown).
3. Place a 14- by 21-inch piece of honeycomb in the rear of the truck.
4. Pad the traversing unit with cellulose wadding, and tape it in place. Recess the traversing unit base in a 12- by 12-inch piece of honeycomb. Place this honeycomb and the traversing unit base on the 14- by 21-inch honeycomb (step 3) with the locking handle toward the rear.
5. Fold the backrests of the individual seats down, and safety them with type III nylon cord.
6. Wedge the traversing unit in place with a piece of honeycomb of the appropriate size.

*Figure 9-5. Guidance set and traversing unit stowed and individual seats safetied*


(1) Bend a 14- by 28-inch piece of honeycomb over the traversing unit.

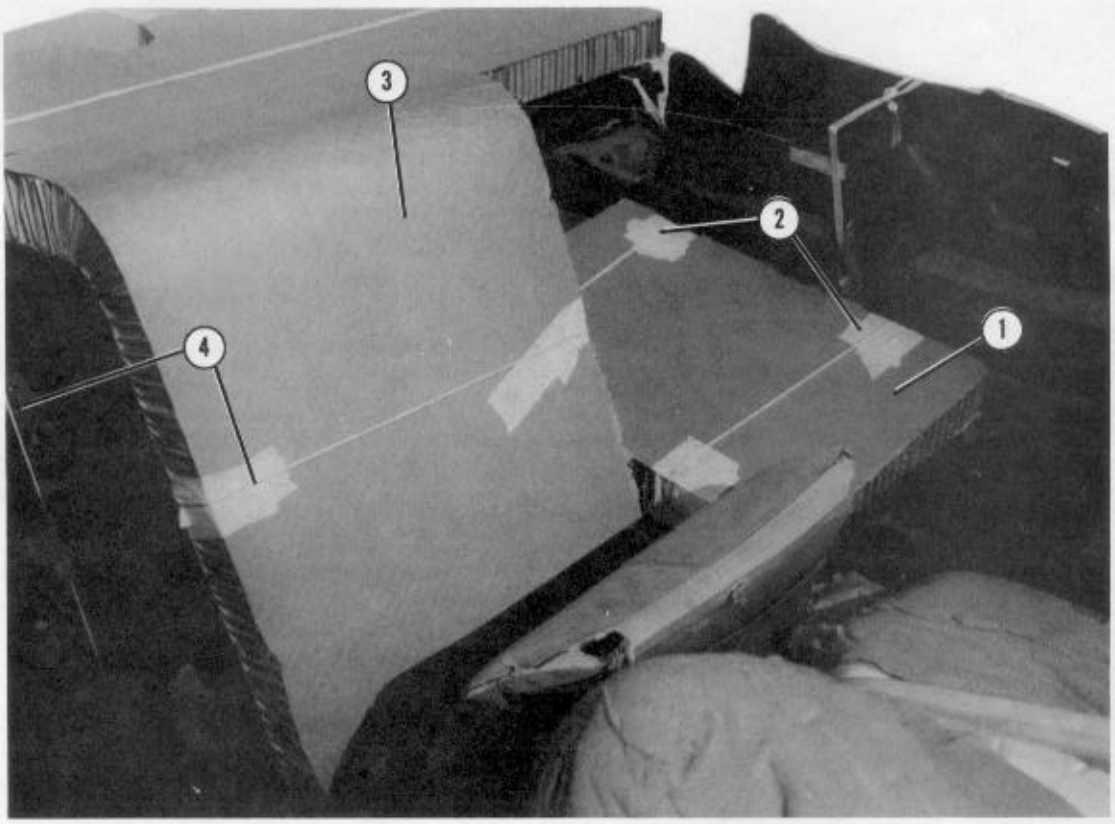
(2) Secure the honeycomb in place with two ties of type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-6. Traversing unit protector installed*



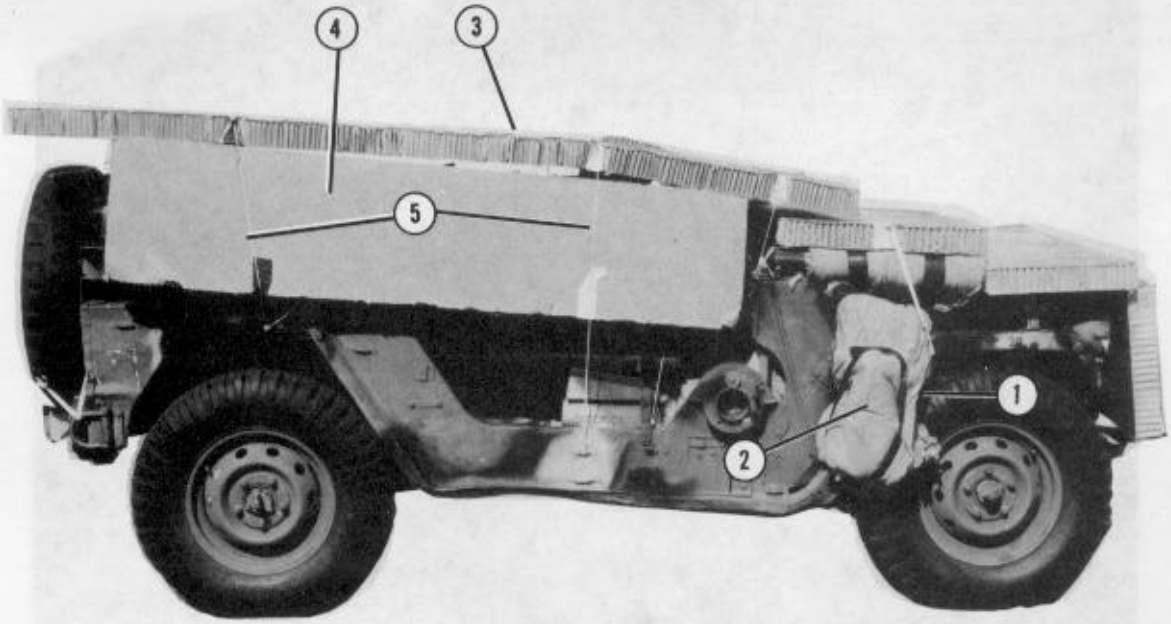

1. Place an 18- by 25-inch piece of honeycomb (with a 6- by 12-inch cutout for the battery box) on the floor of the truck in front of the missile guidance set. Place another 18- by 25-inch piece of honeycomb on top of the first piece.
2. Build an optical sight box using two pieces of 12- by 20-inch honeycomb and two pieces of 12- by 17-inch honeycomb. Hold the box together with tape and type III nylon cord. Place it on the honeycomb positioned in step 1.
3. Lock the guidance set latch assembly, and place the guidance set in the box with the rubber eyepiece in front.

*Figure 9-7. Optical sight box made and sight stowed*




1. Pack cellulose wadding or scraps of honeycomb around the sight to prevent it from moving. Place an 18- by 25-inch piece of honeycomb on top of the optical sight box.
2. Tie the honeycomb to convenient places on the truck with two ties of type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.
3. Place a 20- by 54-inch piece of honeycomb (crushed for the windshield wiper motor and cut across the underside to allow bending) over the steering wheel.
4. Secure the steering wheel protector in place with two ties of type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-8. Optical sight secured and steering wheel protector installed*




1. Strap the shovel in its bracket, and tie it securely with type III nylon cord.
2. Pad the shovel and front fender with cellulose wadding, and tape it in place.
3. Place a 36- by 96-inch piece of honeycomb on the launch tube.
4. Fit a 16- by 71-inch piece of honeycomb on the rear fender and along the side of the truck.
5. Tie the honeycomb to convenient places on the truck with three ties of type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-9. TOW weapon system protector installed*

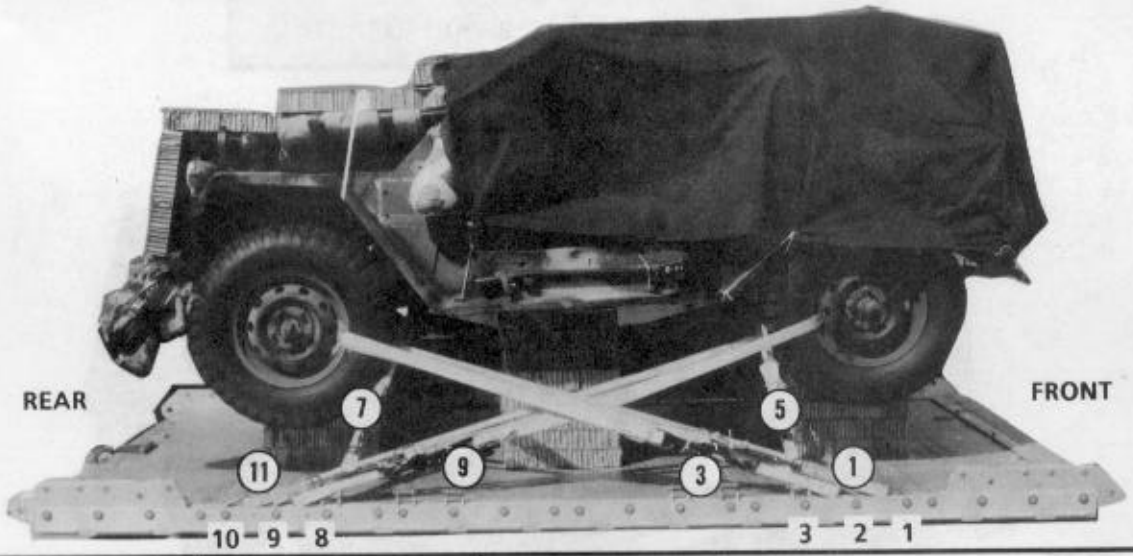
### 9-5. Positioning Firing Vehicle

Bolt a 9-foot (3-loop), type X nylon sling to each wheel with a load tiedown clevis or a small suspension clevis. Place the firing vehicle on the honeycomb stacks with its rear edge even with the front edge of the platform. Remove the 9-foot slings.

### 9-6. Lashing Firing Vehicle

Lash the firing vehicle to the platform with twelve 15-foot tiedown assemblies as shown in Figure 9-10.

***NOTE: Pad all sharp edges that may touch the lashings.***




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | Through left front wheel. |
| 2 | 1A | Through right front wheel. |
| 3 | 2 | Through left front wheel. |
| 4 | 2A | Through right front wheel. |
| 5 | 3 | Around inner left rear suspension arm. |
| 6 | 3A | Around inner right rear suspension arm. |
| 7 | 8 | Around inner left front suspension arm. |
| 8 | 8A | Around inner right front suspension arm. |
| 9 | 9 | Through left rear wheel. |
| 10 | 9A | Through right rear wheel. |
| 11 | 10 | Through left rear wheel. |
| 12 | 10A | Through right rear wheel. |

*Figure 9-10. Lashings installed*

### 9-7. Installing Load Cover and Placing Honeycomb Stacks for Missiles

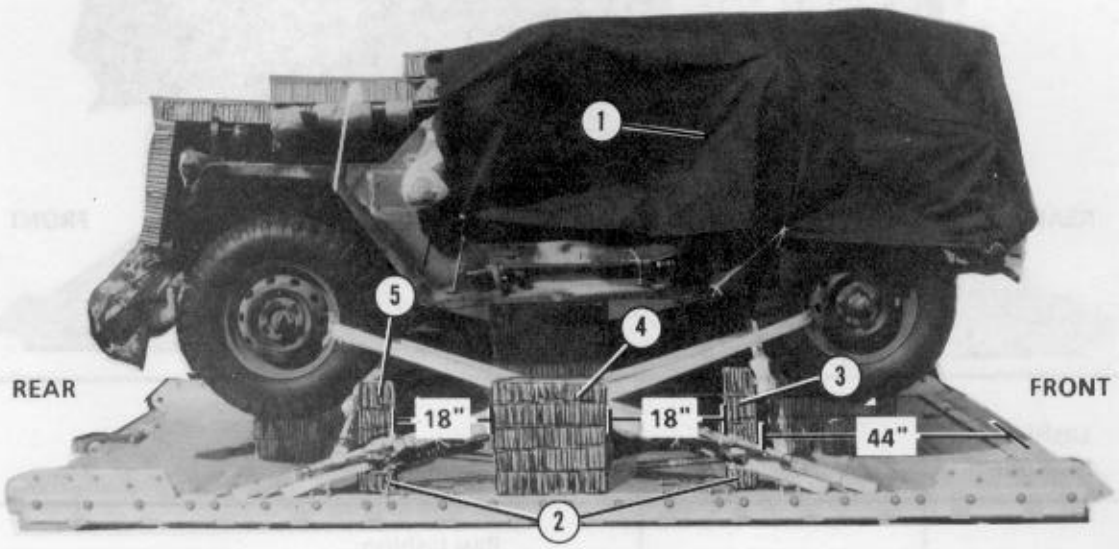
Install the load cover, and place the honeycomb stacks for stowing the missiles.

**a. Installing Load Cover.** Tie a cover over the load as shown in Figure 9-11.

**b. Building and Placing Honeycomb Stacks.** Build the honeycomb stacks for the missiles, and place them on the platform as shown in Figure 9-11.

**CAUTION**

**THE LOAD COVER MUST BE PULLED TAUT.**

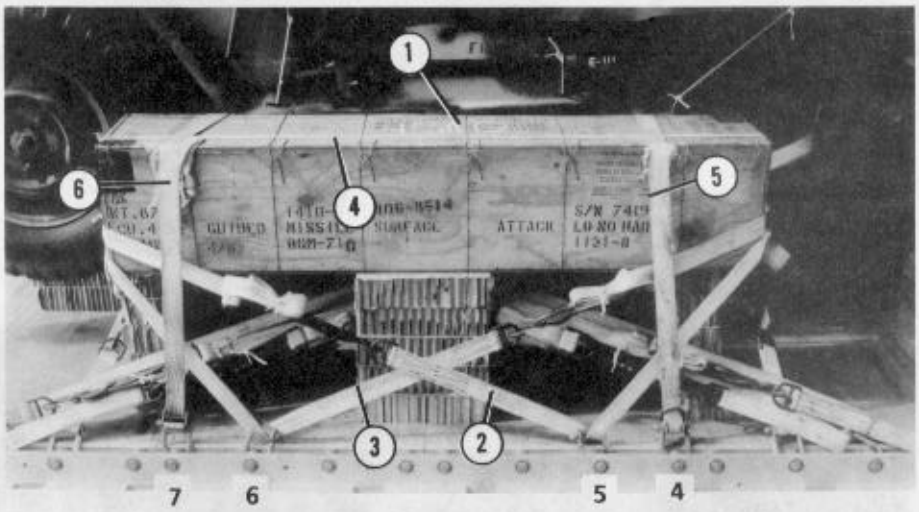



1. Cover the load with a 10- by 10-foot piece of duck cloth. Tie the corners of the cover to convenient places on the truck with type III nylon cord.
2. Use thirty 4- by 12-inch pieces of honeycomb to make six stacks of honeycomb, each stack five layers high. Glue the layers together.
3. Place one of the honeycomb stacks on the platform 44 inches from the front edge of the platform and 6 inches from the right rail.
4. Place a second honeycomb stack on the platform 18 inches from the stack in step 3 and 6 inches from the right rail.
5. Place a third honeycomb stack on the platform 18 inches from the second stack and 6 inches from the right rail.
6. Place the remaining three honeycomb stacks on the left side of the platform as in steps 3, 4, and 5.

*Figure 9-11. Load cover installed and honeycomb stacks placed for stowing missiles*

## 9-8. Stowing and Lashing Missiles on Platform

Stow one missile in its box on each side of the platform and lash it as shown in Figure 9-12.

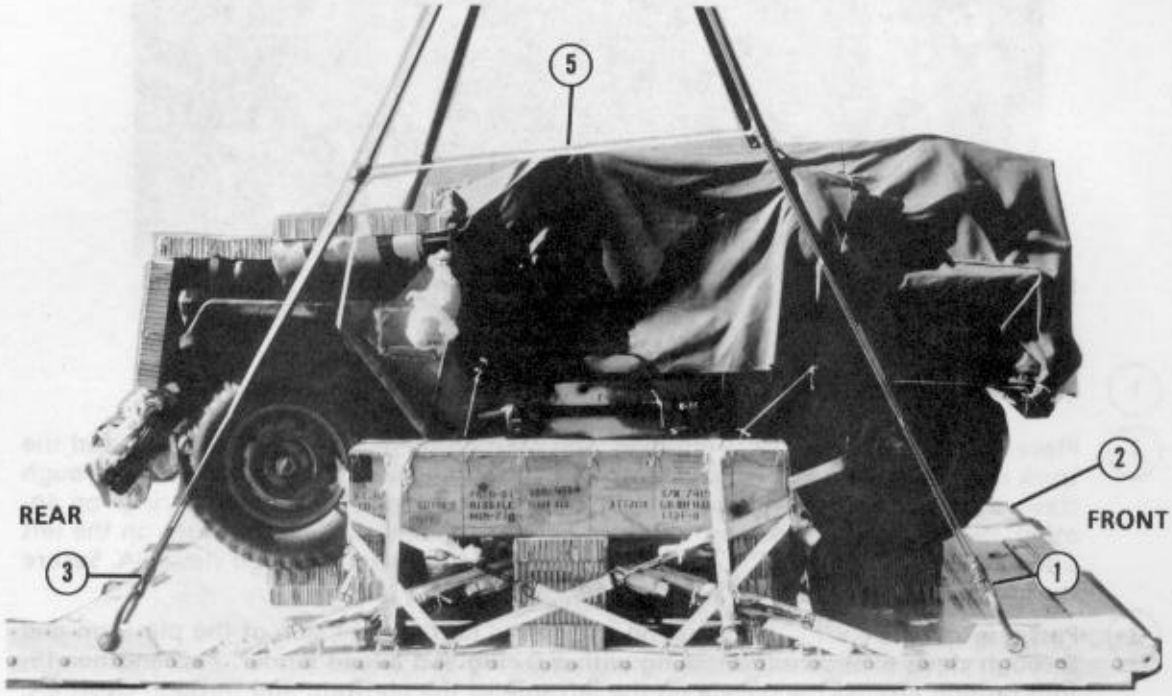



1. Set a boxed missile on the honeycomb stacks on each side of the platform.
2. Place two D-rings on a 15-foot lashing, and position them between the missile and the truck on the right side of the platform. Pass the lashing around the missile and through clevis 5. Secure the lashing with a D-ring and a load binder. Place two D-rings on another 15-foot lashing, and position them between the missile and the truck on the left side of the platform. Pass the lashing around the missile and through clevis 5A. Secure the lashing with a D-ring and a load binder.
3. Pass a second 15-foot lashing around the missile on the right side of the platform and through clevis 6. Secure the lashing with a D-ring and a load binder. Pass another 15-foot lashing around the missile on the left side of the platform and through clevis 6A. Secure the lashing with a D-ring and a load binder.
4. Tie one end of a 72-inch length of 1/2-inch tubular nylon webbing to both lashings on the front end of each missile. Tie the other end to the lashings on the rear end of each missile.
5. Pass a lashing through clevis 4 and through its own D-ring. Pull the lashing tight. Pass the lashing over the missile, through the front previously positioned D-ring (step 2), and under the truck. Run the lashing through the front previously positioned D-ring on the left side of the platform (step 2), and over the missile on the left side of the platform. Secure the lashing with a D-ring and a load binder to clevis 4A.
6. Pass a lashing through clevis 7 and through its own D-ring. Pull the lashing tight. Pass the lashing over the missile, through the rear previously positioned D-ring on the right side of the platform (step 2), and under the truck. Run the lashing through the rear previously positioned D-ring on the left side of the platform (step 2), and over the missile on the left side of the platform. Secure the lashing with a D-ring and a load binder to clevis 7A.

*Figure 9-12. Two missiles stowed*

### 9-9. Attaching Suspension Slings and Deadman's Tie

Using four 12-foot (2-loop), type XXVI nylon slings and four large clevises, install suspension slings as shown in Figure 9-13.

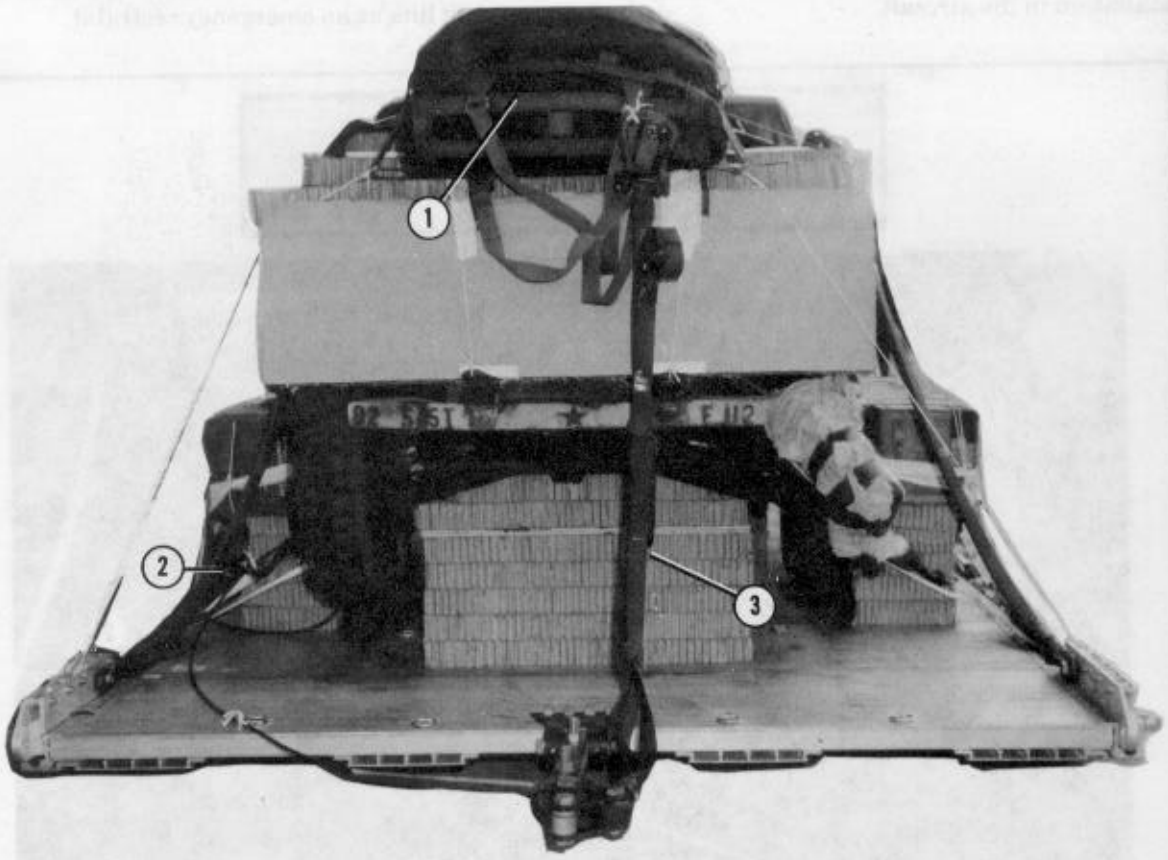



1. Attach a 12-foot (2-loop), type XXVI nylon sling to a large clevis. Bolt the clevis to the right front tandem link.
2. Repeat the same procedure as in step 1 for the left front tandem link.
3. Attach a 12-foot (2-loop), type XXVI nylon sling to a large clevis. Bolt the clevis to the right rear tandem link.
4. Repeat the same procedure as in step 3 for the left rear tandem link.
5. Install the deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5 but with the tie flush with the top of the load.

*Figure 9-13. Slings safetied*

### 9-10. Stowing Cargo Parachutes and Installing Extraction System

Prepare and stow two G-11A parachutes or one G-11B cargo parachute as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-14. Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-14.




1. Stow one G-11B cargo parachute.
2. Bolt the EFTC mounting bracket to the front mounting holes on the left side rail.
3. Install the EFTC extraction system according to FM10-500-2/TO 13C7-1-5 using a 9-foot (2-loop), type XXVI deployment line.

*Figure 9-14. Cargo parachute stowed and EFTC extraction system installed*

### 9-11. Installing Release System

Prepare and attach an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-15.

### 9-12. Placing Extraction Parachute

Place the extraction parachute as described below.

**a. C-130 Aircraft.** Place an unreefed 15-foot cargo extraction parachute on the load for installation in the aircraft.

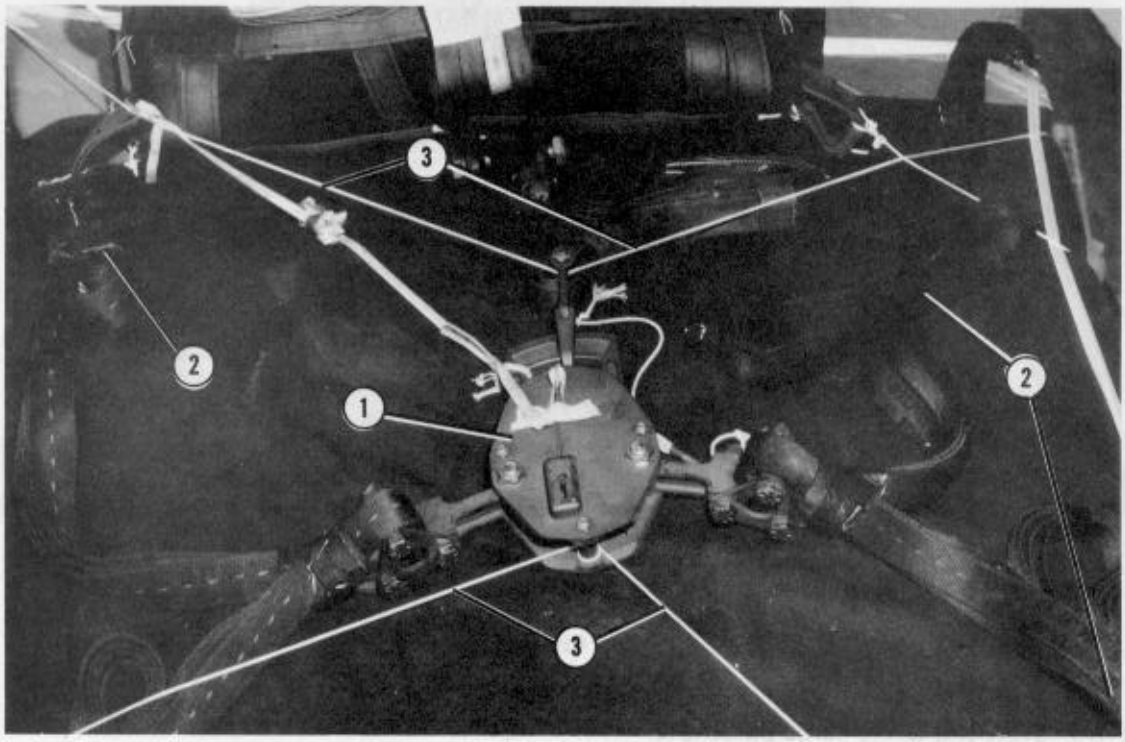
**b. C-141 Aircraft.** Place an unreefed 15-foot cargo extraction parachute with a 36-inch adapter web and a continuous 160-foot (1-loop), type XXVI nylon extraction line on the load for installation in the aircraft. The extraction line MUST be a continuous 160-foot line.

### 9-13. Installing Emergency Restraints

Install a medium clevis in the front hole of each tandem link as an emergency restraint.

**CAUTION**

**THE M-1 CARGO PARACHUTE RELEASE MUST BE USED WITH THE G-11B CARGO PARACHUTE.**




1. Center the M-1 cargo parachute release on top of the load, and attach the parachute riser and suspension slings.
2. Fold any excess parachute riser and suspension slings, and tape the folds in place.
3. Tie the release to each side of the vehicle with type III nylon cord.

*Figure 9-15. M-1 cargo parachute release installed*

### 9-14. Marking Rigged Load

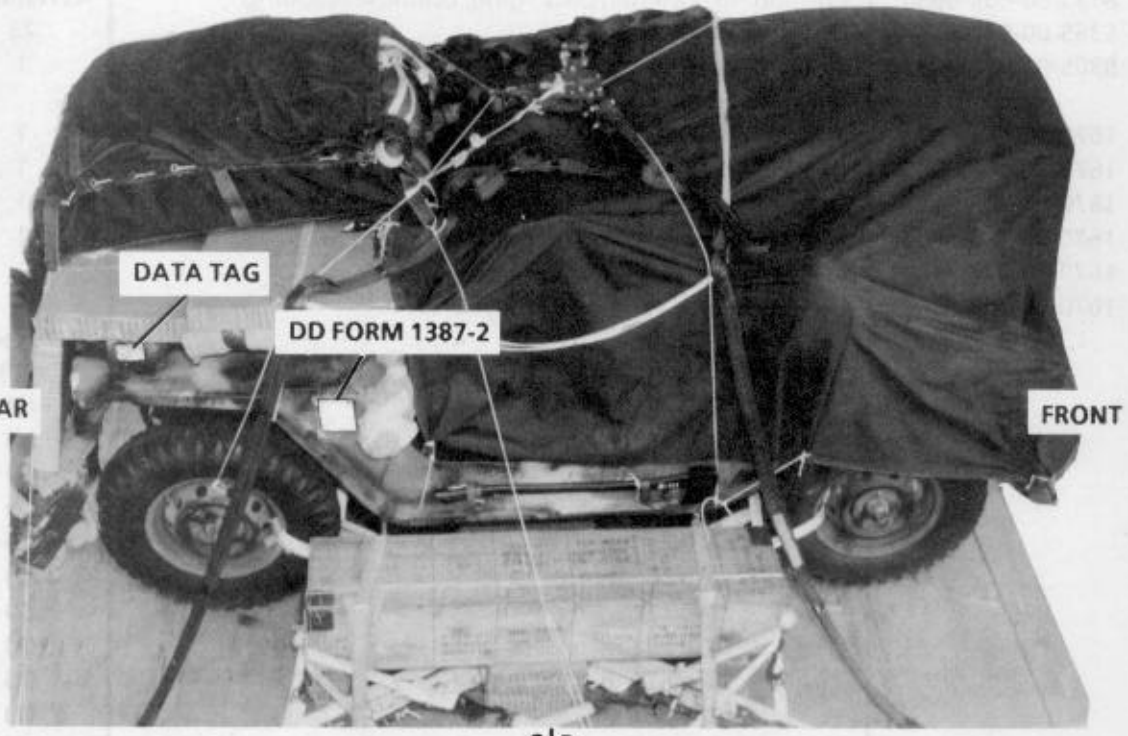
Mark the rigged load as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-16. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the vehicle fuel tank and battery have been prepared according to AFR 71-4/ TM 38-250. If the load varies from that shown, the weight, CB, and parachute requirements must be recomputed.

### 9-15. Equipment Required

Use the equipment listed in Table 9-1 to rig this load.

**CAUTION**

**MAKE THE FINAL RIGGER INSPECTION REQUIRED BY AFR 55-40/AR 59-4 BEFORE THE LOAD LEAVES THE RIGGING SITE.**




C|B

**RIGGED LOAD DATA**

| | |
|---|---|
| Weight: Load shown | 4,850 pounds |
| Maximum allowed | 5,300 pounds |
| Height | 73 inches |
| Width | 108 inches |
| Length | 166 inches |
| Overhang: Rear (extraction system) | 18 inches |
| CB (from front edge of platform) | 75 inches |

*Figure 9-16. M151A2 truck with TOW weapon system rigged for low-velocity airdrop on a type V airdrop platform*

*Table 9-1. Equipment required for rigging the M151A2 truck with TOW weapon system for low-velocity airdrop on a type V platform*

| National Stock Number | Item | Quantity |
|---|---|---|
| 1670-01-062-6312 | Adapter web, 36-in (for 15-ft parachute) | 1 |
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 8305-00-242-3593 | Cloth, cotton duck, 60-in | 8 yd |
| 4020-00-240-2146 | Cord, nylon, type III, 550-lb | As required |
| 1670-00-434-5783 | Coupling, airdrop extraction force transfer w 12-foot cable | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 5365-00-937-0147 | D-ring, heavy-duty,10,000-lb | 23 |
| 8305-00-958-3685 | Felt, 1/2- by 6- by 6-in | 1 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing (for C-130) or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (for C-130) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing (for C-141) | 1 |
| 1670-00-783-5988 | Link assembly, type IV (for extraction line) | 1 |
| 1670-00-217-2421 | Link, L-bar type | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in | 10 sheets |
| | 4- by 12-in | (30) |
| | 6- by 18-in | (6) |
| | 12- by 6-in | (4) |
| | 12- by 12-in | (2) |
| | 12- by 17-in | (2) |
| | 12- by 18-in | (8) |
| | 12- by 20-in | (2) |
| | 14- by 21-in | (2) |
| | 14- by 28-in | (1) |
| | 16- by 71-in | (1) |
| | 17- by 61-in | (1) |
| | 18- by 25-in | (3) |
| | 19- by 61-in | (1) |
| | 20- by 54-in | (1) |
| | 36- by 18-in | (14) |
| | 36- by 96-in | (1) |
| | 44- by 6-in | (1) |
| | 61- by 24-in | (1) |
| 1670-01-183-2678 | Panel, sling, extraction line | 2 |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 1 |

*Table 9-1. Equipment required for rigging the M151A2 truck with TOW weapon system for low-velocity airdrop on a type V platform (continued)*

| National Stock Number | Item | Quantity |
|---|---|---|
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft (unreefed) | 1 |
| | Platform, AD, type V 12-ft: | |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | 1 |
| 1670-01-162-2374 | Outside EFTA | 1 |
| 1670-01-162-2385 | Bumper, nose | 1 |
| 1670-01-162-2372 | Clevis, load tiedown | 20 |
| 1670-01-162-2376 | Extraction bracket assembly | 1 |
| 1670-01-162-2381 | Tandem link | 4 |
| 5530-00-128-4981 | Plywood, 3/4-in: | |
| | 24- by 44-in | 1 |
| | 36- by 18-in | 2 |
| | 48- by 24-in | 1 |
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo, airdrop: | |
| 1670-00-753-3788 | 3-ft (3-loop), type X nylon webbing or | 1 |
| 1670-01-062-6301 | 3-ft (2-loop), type XXVI nylon webbing | 1 |
| 1670-00-753-3631 | 9-ft (3-loop), type X nylon webbing or | 5 |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 5 |
| 1670-00-823-5041 | 12-ft (3-loop), type X nylon webbing or | 4 |
| 1670-01-062-6303 | 12-ft (2-loop), type XXVI nylon webbing | 4 |
| 1670-00-753-3794 | 20-ft (2-loop), type X nylon webbing or | 2 |
| 1670-01-062-6302 | 20-ft (2-loop), type XXVI nylon webbing | 2 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft, 10,000-lb | 19 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, 80-lb | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, 1,000-lb, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII, 3,600-lb | As required |

## Section II

## RIGGING M151A2, 1/4-TON TRUCK (MISSILE CARRIER) AND SIX MISSILES

### 9-16. Description of Load

The M151A2, 1/4-ton utility truck (missile carrier), with six encassed missies, is rigged on a 12-foot, type V platform. It is rigged with two G-11A cargo parachutes or one G-11B cargo parachute. The six encased missiles are part of the basic load. This load can be airdropped from a C-130 or a C-141 aircraft.

### 9-17. Preparing Platform

Prepare a 12-foot, type V airdrop platform as described below.

**a. Assembling and Inspecting Platform.** Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20 & P/TO 13C7-52-22.

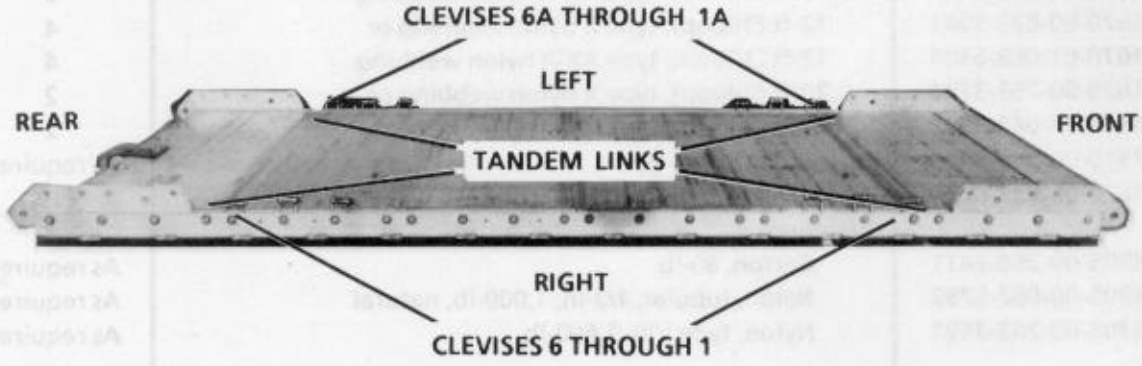
**b. Installing Tandem Links.** Install a tandem link on the front and rear of each rail as shown in Figure 9-17.

**c. Attaching and Numbering Clevises.** Bolt 12 tiedown clevises to the side rail bushings according to TM 10-1670-268-20&P/TO 13C7-52-22. Number the clevises as shown in Figure 9-17.

*NOTES:*

*1. The nose bumper may or may not be installed.*

*2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.*




Step:

1. Starting at bushing 1 behind each front tandem link, attach a clevis to bushings 2, 3, 4, 15, 16, and 17.
2. Starting at the front of the platform, number the clevises bolted to the right rail 1 through 6 and those bolted to the left rail 1A through 6A.

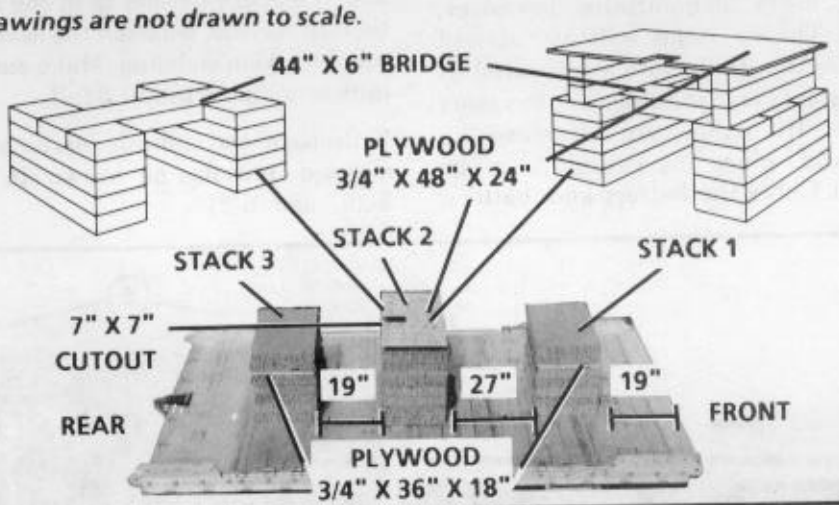
***NOTE: The suspension clevises will be attached to the tandem links later.***

*Figure 9-17. Platform prepared*

## 9-18. Building and Placing Honeycomb Stacks

Build the honeycomb stacks and place them on the platform as shown in Figure 9-18.

*NOTE: The drawings are not drawn to scale.*




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 19 inches from the front edge. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |
| 2 | 8 | 12 | 18 | Honeycomb | Place four pieces of honeycomb on each side of the platform an equal distance from the side rail and 27 inches from stack 1. |
| | 1 | 44 | 6 | Honeycomb | Center honeycomb over the side stacks as a bridge. |
| | 4 | 12 | 6 | Honeycomb | Place one piece of honeycomb to each side of the side stacks on each side of the bridge. |
| | 6 | 6 | 18 | Honeycomb | Center three pieces of honeycomb on each side of the stack. |
| | 1 | 48 | 24 | 3/4-inch plywood | Place plywood on top of stack with a 7- by 7-inch cutout centered on the rear. |
| 3 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 19 inches from stack 2. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |

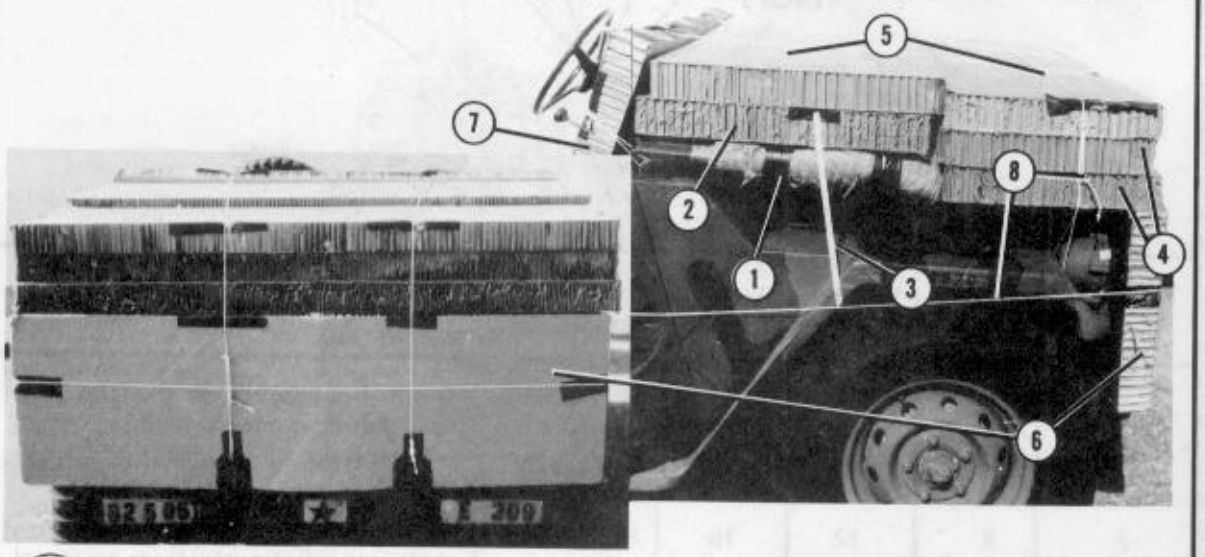
*Figure 9-18. Honeycomb stacks prepared and positioned*

### 9-19. Preparing Missile Carrier and Stowing Missiles

Prepare the missile carrier and stow the missiles as described below.

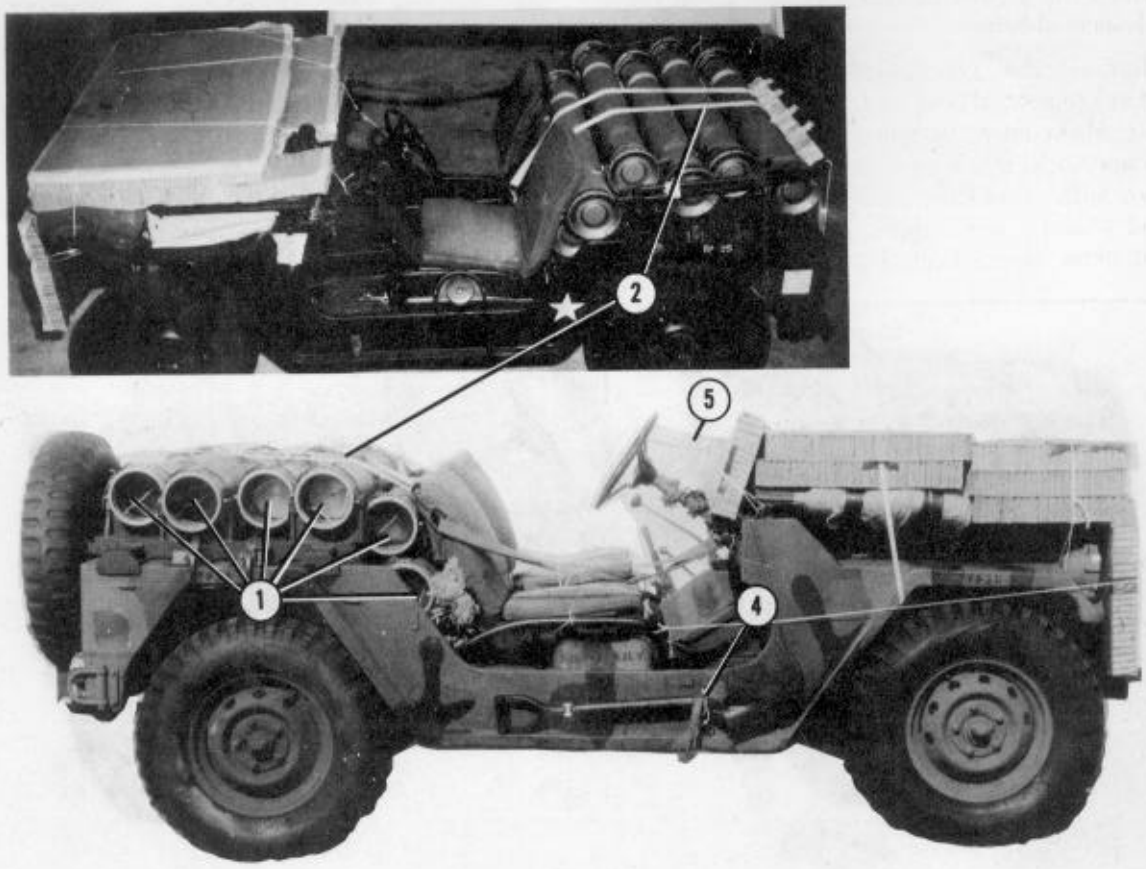
**a.** Remove the doors, side curtains, top cover, and rear seat. These items will be stowed later. Make sure the front seats are secured. If the seat locking pins are missing, tie the seats down with type III nylon cord. Release the hand brake, and place the gearshift in the neutral position. Check the battery and battery compartment, and prepare them according to FM 10-500-2/TO 13C7-1-5 and AFR 71-4/TM 38-250. If a spare battery is in the missile carrier, tie it in its rack between the seats with 1/2-inch tubular nylon webbing. Make sure that the fuel tank is not more than 1/2 full.

**b.** Prepare the missile carrier and stow the six encased missiles as shown in Figures 9-19, 9-20, and 9-21.




1. Wrap the windshield with cellulose wadding, and tape the wadding in place. Fold the windshield down. Secure it with hold-down straps.
2. Place a 24- by 61-inch piece of honeycomb on top of the windshield. Make a 6- by 9-inch cutout for the wiper motor and a 4- by 4-inch cutout for the rearview mirror.
3. Tie the honeycomb on the windshield with 1/2-inch tubular nylon webbing. Tie the webbing around the missile carrier frame on each side.
4. Place two 18- by 61-inch pieces of honeycomb on the hood of the missile carrier in front of the windshield.
5. If the honeycomb needs to be leveled, place an 18- by 61-inch piece of honeycomb on top of the honeycomb positioned in step 2. Place a 24- by 61-inch piece of honeycomb on top of the honeycomb positioned in step 4.
6. Place an 18- by 61-inch piece of honeycomb with two 4- by 7-inch cutouts for the front lifting shackles on the front bumper.
7. Set a 12- by 61-inch piece of honeycomb on the steering column and against the dash.
8. Tie the honeycomb to convenient places on the missile carrier with type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-19. Front of missile carrier prepared*




(1) Position six encased missiles in their racks, and secure them with the straps provided or 1/2-inch tubular nylon webbing. Safety the rack in place with two ties of type III nylon cord.

(2) Pass a 15-foot tiedown strap around the inside rear braces of the seats, over the missiles, and under the towing pintle. Secure it with a D-ring and a load binder.

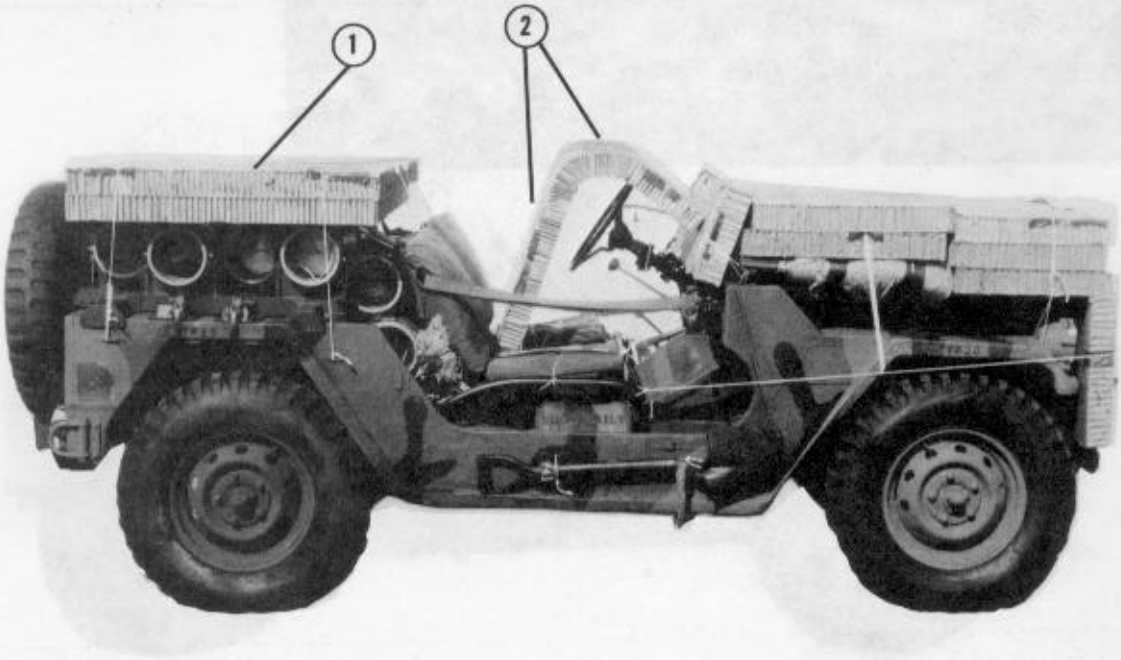
***NOTE: If rigging a vehicle with top frame bows, secure them together with the straps provided and tape them. Safety them with type III nylon cord. Tape a 4- by 26-inch piece of honeycomb between the top frame and last missile.***

(3) Pad the side mirror with cellulose wadding. Turn the mirror down against the body, and tape it in place (not shown).

(4) Place the pioneer tools in their racks, and secure the tools with their tiedown straps. Safety the tools in place using type III nylon cord.

(5) Tie the steering wheel to the left windshield hinge bracket with a length of 1/2-inch tubular nylon webbing or doubled type III nylon cord.

*Figure 9-20. Six missiles stowed*




(1) Place two 36- by 61-inch pieces of honeycomb on the missiles. Safety the honeycomb in place with three ties of type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

(2) Place a 36- by 50-inch piece of honeycomb over the steering wheel. Make knife cuts across the underside of the honeycomb at the top of the steering wheel to allow the honeycomb to bend. Fold the top of the honeycomb down against the steering wheel column and the honeycomb on the dash. Tie the steering wheel protector in place with type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

*Figure 9-21. Honeycomb secured over missiles and steering wheel*

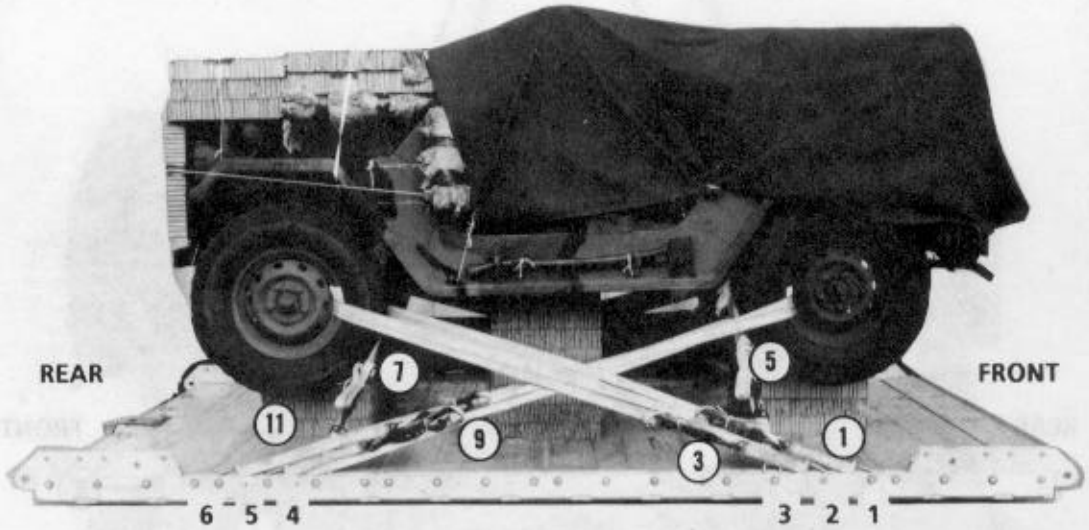
### 9-20. Positioning Missile Carrier

Bolt a 9-foot (3-loop), type X nylon sling to each wheel with a load tiedown clevis or a small suspension clevis. Place the missile carrier on the honeycomb stacks with the rear edge of the missile carrier even with the front edge of the platform. Remove the 9-foot slings.

### 9-21. Lashing Missile Carrier

Lash the missile carrier to the platform with twelve 15-foot tiedown assemblies as shown in Figure 9-22.

***NOTE: Pad all sharp edges that may touch the lashings.***




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | Through left front wheel. |
| 2 | 1A | Through right front wheel. |
| 3 | 2 | Through left front wheel. |
| 4 | 2A | Through right front wheel. |
| 5 | 3 | Around inner left rear suspension arm. |
| 6 | 3A | Around inner right rear suspension arm. |
| 7 | 4 | Around inner left front suspension arm. |
| 8 | 4A | Around inner right front suspension arm. |
| 9 | 5 | Through left rear wheel. |
| 10 | 5A | Through right rear wheel. |
| 11 | 6 | Through left rear wheel. |
| 12 | 6A | Through right rear wheel. |

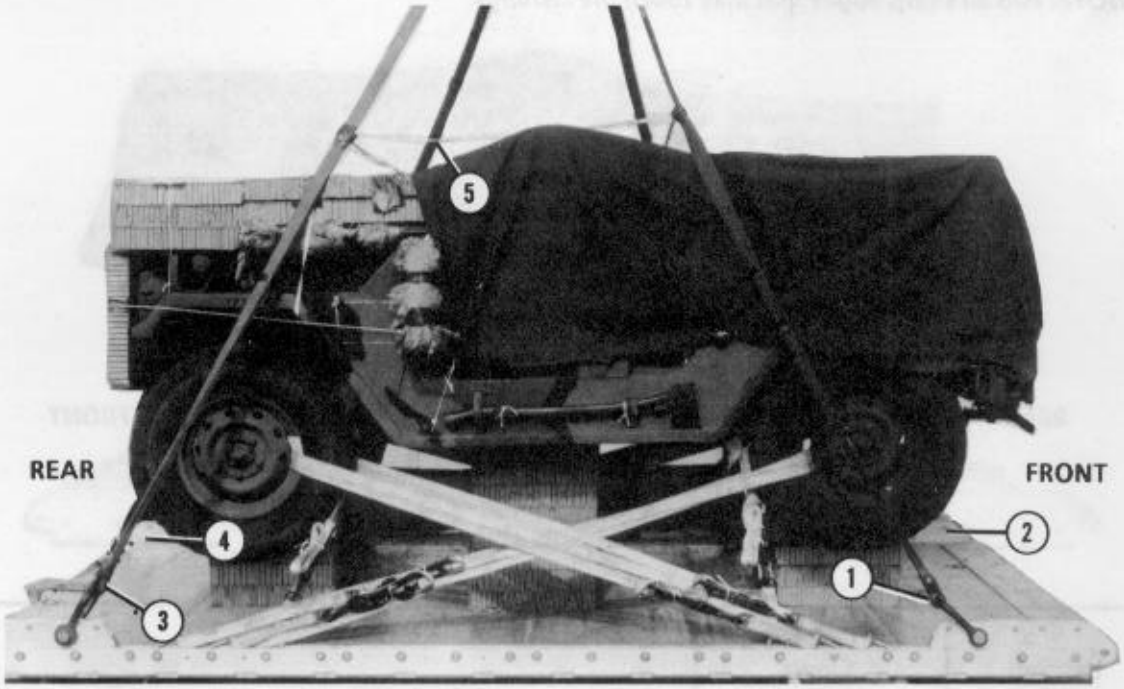
*Figure 9-22. Lashings installed*

### 9-22. Installing Load Cover

Cover the load with a 10-by 10-foot piece of duck cloth. Tie the corners of the cover to convenient places on the missile carrier with type III nylon cord.

### 9-23. Attaching Suspension Slings and Deadman's Tie

Install suspension slings using four 12-foot (2-loop), type XXVI nylon slings and four large clevises as shown in Figure 9-23.

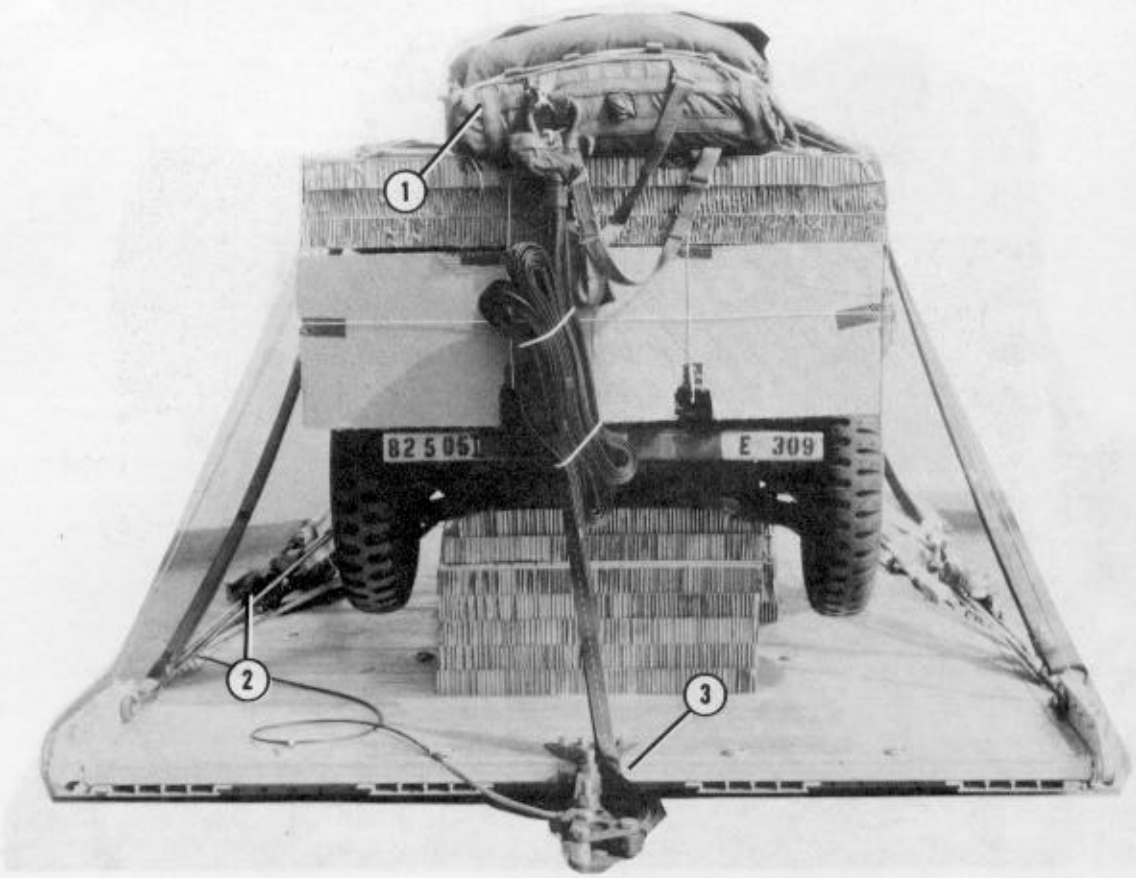



1. Attach a 12-foot (2-loop), type XXVI nylon sling to a large clevis. Hook the clevis to the right front tandem link.
2. Repeat the same procedure as in step 1 for the left front tandem link.
3. Attach a 12-foot (2-loop), type XXVI nylon sling to a large clevis. Hook the clevis to the right rear tandem link.
4. Repeat the same procedure as in step 3 for the left rear tandem link.
5. Install the deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5, but with the tie flush with the top of the load.

*Figure 9-23. Suspension slings installed and safetied*

**9-24. Stowing Cargo Parachutes and Installing Extraction System**

Prepare and stow two G-11A parachutes or one G-11B cargo parachute as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-24. Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-24.




REAR

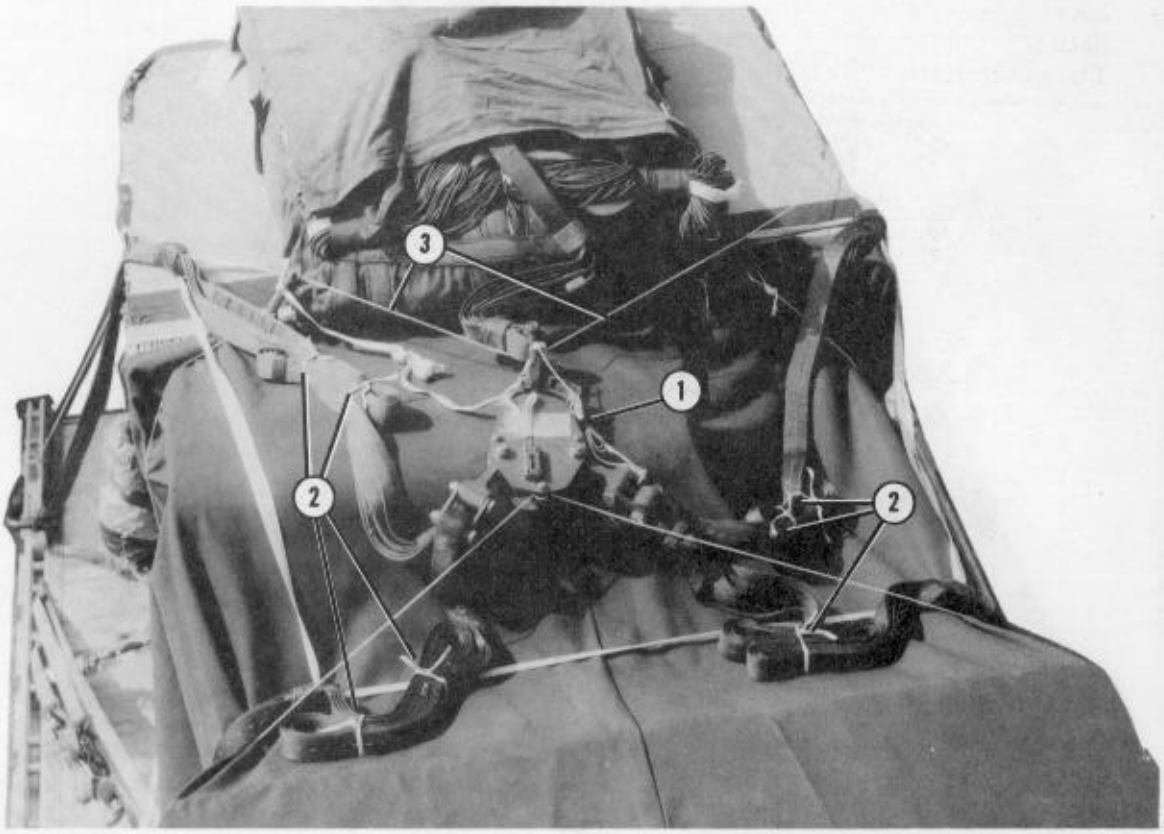
1. Stow one G-11B cargo parachute.
2. Bolt the EFTC mounting bracket to the rearmost mounting holes on the left side rail.
3. Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 using a 9-foot (2-loop), type XXVI nylon sling for the deployment line.

*Figure 9-24. Cargo parachute stowed and EFTC extraction system installed*

### 9-25. Installing Release System

Prepare and attach an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-25.

**CAUTION**
**THE M-1 CARGO PARACHUTE RELEASE MUST BE USED WITH THE G-11B CARGO PARACHUTE.**




(1) Center the M-1 cargo parachute release on top of the load, and attach the parachute riser and suspension slings.

(2) Fold any excess parachute riser and suspension slings, and tie the folds in place.

(3) Tie the release to each side of the missile carrier with type III nylon cord.

*Figure 9-25. M-1 cargo parachute release installed*

### 9-26. Placing Extraction Parachute

Place the extraction parachute as described below.

**a. C-130 Aircraft.** Place an unreefed 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

**b. C-141 Aircraft.** Place an unreefed 15-foot cargo extraction parachute with a 36-inch adapter web and a continuous 160-foot (1-loop), type XXVI nylon extraction line on the load for installation in the aircraft. The extraction line MUST be a continuous 160-foot line.

### 9-27. Installing Emergency Restraints

Install a medium clevis in the front hole of each tandem link as an emergency restraint.

### 9-28. Marking Rigged Load

Mark the rigged load as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-26. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the vehicle fuel tank and battery have been prepared according to AFR 71-4/TM 38-250. If the load varies from that shown, the weight, CB, and parachute requirements must be recomputed.

**CAUTION**

**MAKE THE FINAL RIGGER INSPECTION REQUIRED BY AFR 55-40/AR 59-4 BEFORE THE LOAD LEAVES THE RIGGING SITE.**


**RIGGED LOAD DATA**

| | |
|---|---|
| Weight: Load shown | 4,590 pounds |
| Maximum allowed | 5,300 pounds |
| Height | 73 inches |
| Width | 108 inches |
| Length | 144 inches |
| CB (from front edge of platform) | 74 inches |

*Figure 9-26. M151A2 truck and six missiles rigged for low-velocity airdrop on a type V airdrop platform*

### 9-29. Equipment Required

Use the equipment listed in Table 9-2 to rig this load.

*Table 9-2. Equipment required for rigging the M151A2 truck and six missiles for low-velocity airdrop on a type V platform*

| National Stock Number | Item | Quantity |
|---|---|---|
| 1670-01-062-6312 | Adapter web, 36-in (for 15-ft parachute) | 1 |
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 4 |
| 4030-00-090-5354 | 1-in (large) | 3 |
| 8305-00-242-3593 | Cloth, cotton duck, 60-in | 8 yd |
| 4020-00-240-2146 | Cord, nylon, type III, 550-lb | As required |
| 1670-00-434-5783 | Coupling, airdrop extraction force transfer w 12-foot cable | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 5365-00-937-0147 | D-ring, heavy-duty, 10,000-lb | 13 |
| 8305-00-958-3685 | Felt, 1/2- by 6- by 6-in | 1 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing (for C-130) or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (for C-130) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing (for C-141) | 1 |
| 1670-00-783-5988 | Link assembly, type IV (for extraction line) | 1 |
| 1670-00-217-2421 | Link, L-bar type | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in: | 10 sheets |
| | 4- by 26-in | (1) |
| | 6- by 18-in | (6) |
| | 12- by 6-in | (4) |
| | 12- by 18-in | (8) |
| | 12- by 61-in | (1) |
| | 18- by 61-in | (4) |
| | 24- by 61-in | (2) |
| | 36- by 18-in | (14) |
| | 36- by 50-in | (1) |
| | 36- by 61-in | (1) |
| | 44- by 6-in | (1) |
| 1670-01-183-2678 | Panel, sling, extraction line | 2 |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 1 |

*Table 9-2. Equipment required for rigging the M151A2 truck and six missiles for low-velocity airdrop on a type V platform (continued)*

| National Stock Number | Item | Quantity |
|---|---|---|
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft (unreefed) | 1 |
| | Platform, AD, type V, 12-ft: | |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | 1 |
| 1670-01-162-2374 | Outside EFTA | 1 |
| 1670-01-162-2385 | Bumper, nose | 1 |
| 1670-01-162-2372 | Clevis, load tiedown | 12 |
| 1670-01-162-2376 | Extraction bracket assembly | 1 |
| 1670-01-162-2381 | Tandem link | 4 |
| 5530-00-128-4981 | Plywood, 3/4-in: | |
| | 24- by 44-in | 1 |
| | 24- by 48-in | 1 |
| | 36- by 18-in | 2 |
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo, airdrop: | |
| 1670-00-753-3788 | 3-ft (3-loop), type X nylon webbing or | 1 |
| 1670-01-062-6301 | 3-ft (2-loop), type XXVI nylon webbing | 1 |
| 1670-00-753-3631 | 9-ft (3-loop), type X nylon webbing or | 5 |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 5 |
| 1670-00-823-5041 | 12-ft (3-loop), type X nylon webbing or | 4 |
| 1670-01-062-6303 | 12-ft (2-loop), type XXVI nylon webbing | 4 |
| 1670-00-753-3794 | 20-ft (2-loop), type X nylon webbing or | 2 |
| 1670-01-062-6302 | 20-ft (2-loop), type XXVI nylon webbing | 2 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft, 10,000-lb | 13 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, 80-lb | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, 1,000-lb, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII, 3,600-lb | As required |

# CHAPTER 11

# RIGGING TOW MISSILES ON THE TYPE V AIRDROP PLATFORM

## Section I

## RIGGING M151A2, 1/4-TON TRUCK (MISSILE CARRIER) AND M416,1/4-TON CARGO TRAILER WITH MISSILES FOR LOW-VELOCITY AIRDROP

### 11-1. Description of Load

The M151A2, 1/4-ton utility truck (missile carrier) with six encased missiles; the M416, 1/4-ton cargo trailer with seven boxed missiles; and an accompanying load are rigged on a 16-foot, type V platform. The accompanying load consists of six ammunition boxes that weigh a total of 660 pounds. The load is rigged with two G-11A or two G-11B cargo parachutes. This load can be airdropped from a C-130 or a C-141 aircraft.

### 11-2. Preparing Platform

Prepare a 16-foot, type V airdrop platform as described below.

**a. Assembling and Inspecting Platform.** Inspect, or assemble and inspect, a 16-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.

**b. Installing Tandem Links.** Install a tandem link on the front and rear of each rail as shown in Figure 11-1.

**c. Attaching and Numbering Clevises.** Bolt 28 tiedown clevises to the side rail bushings and tandem links according to TM 10-1670-268-20&P/TO 13C7-52-22. Number the clevises as shown in Figure 11-1.

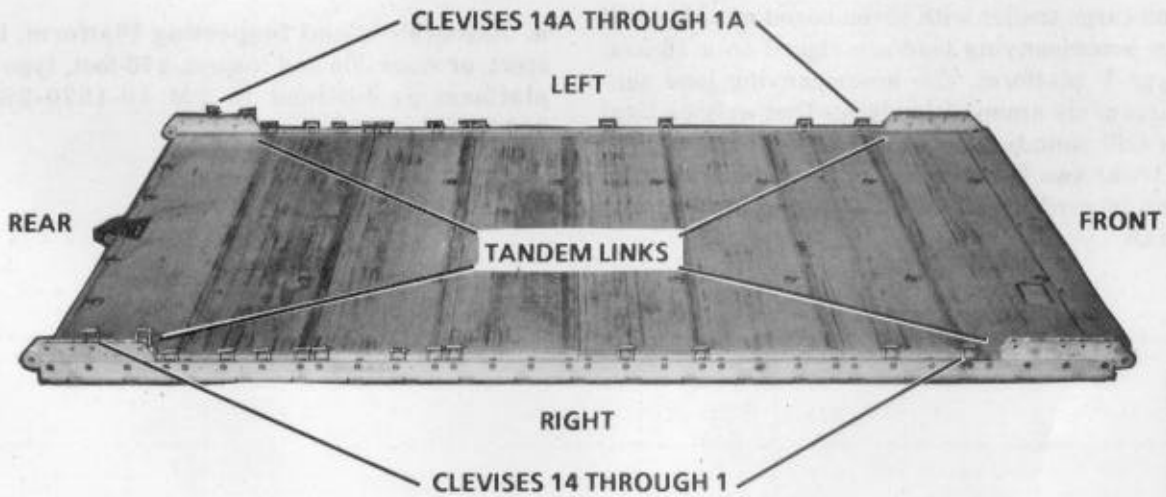
*NOTES:*

*1. The nose bumper may or may not be installed.*

*2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.*

### 11-3. Building and Placing Honeycomb Stacks

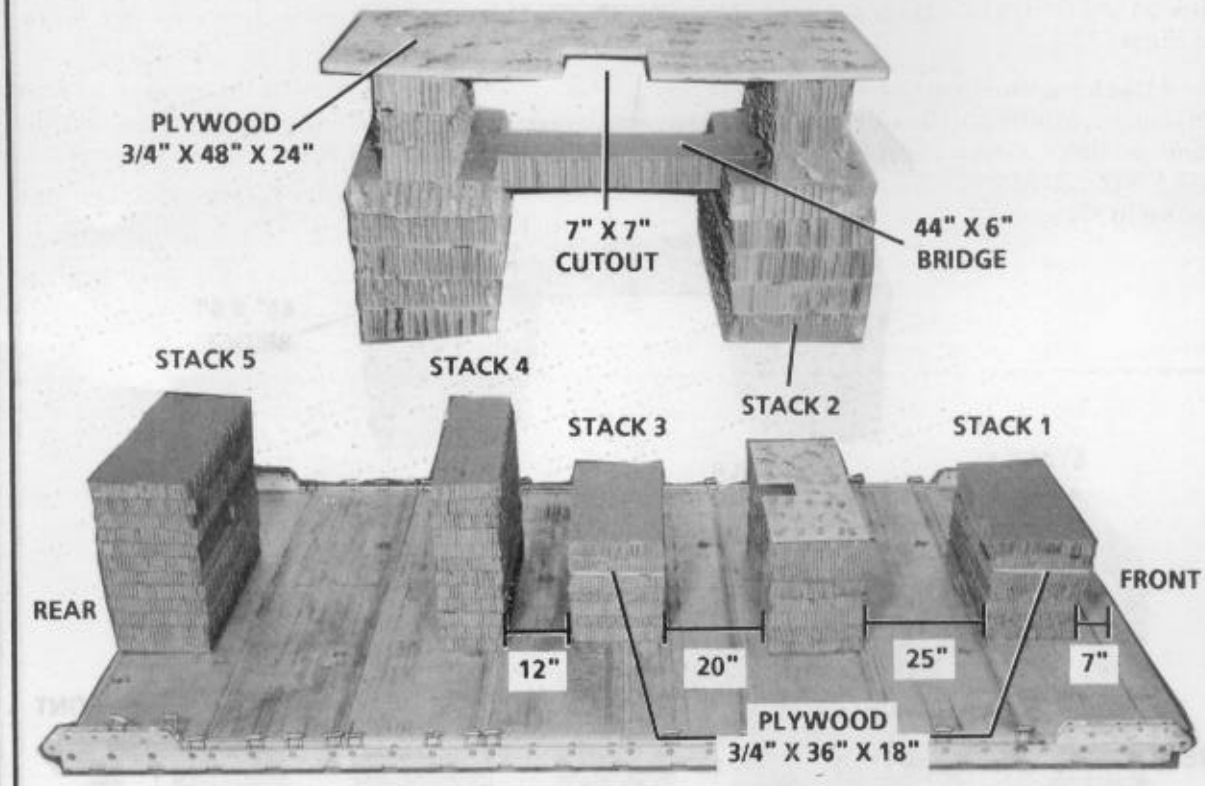
Build the honeycomb stacks and place them on the platform as shown in Figure 11-2.




Step:

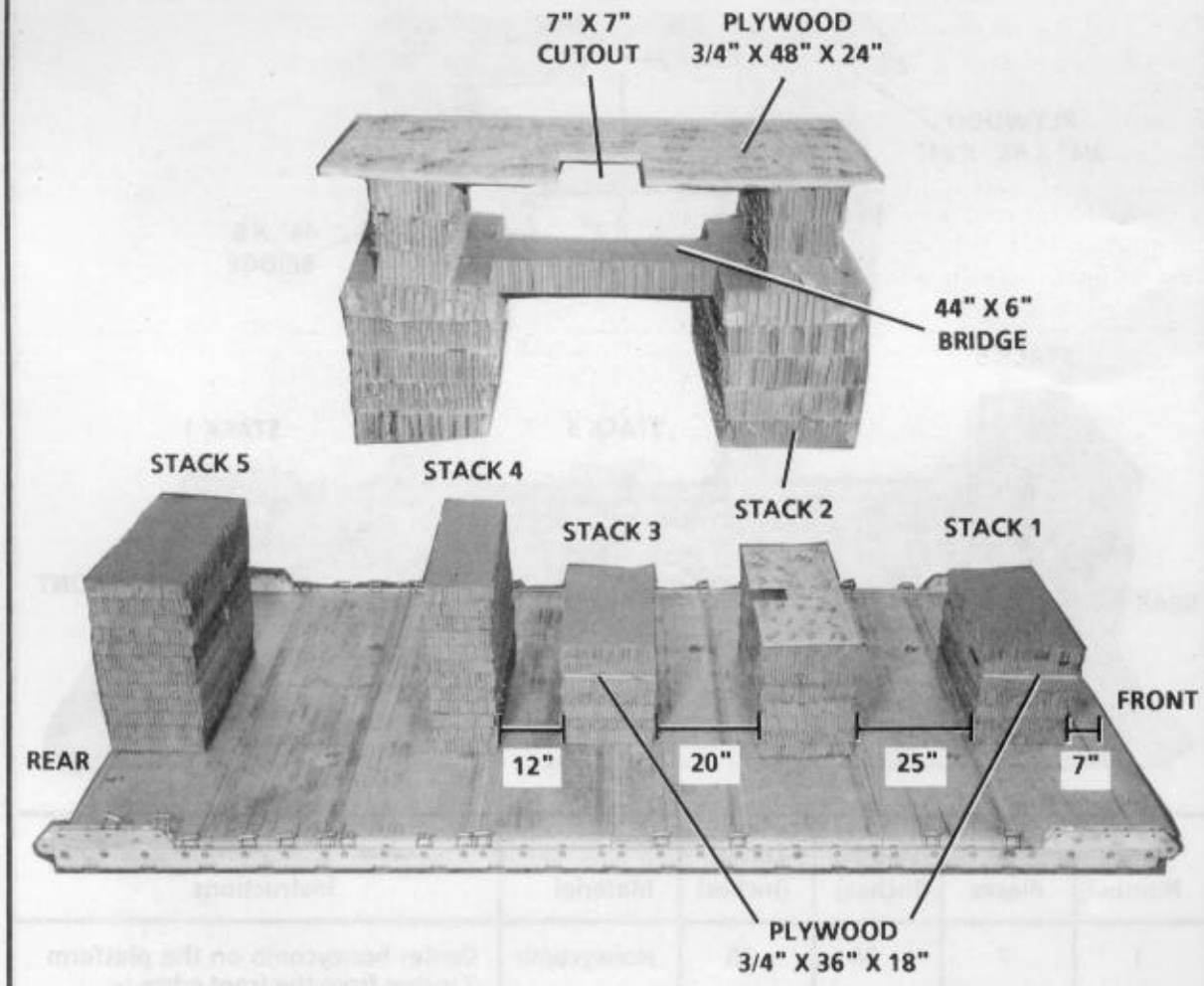
1. Starting at bushing 1 behind each front tandem link, attach a clevis to bushings 2, 4, 10, 12, 17, 18, 19, 21, 22, 23, 24, 26, 27, and 28.
2. Starting at the front of the platform, number the clevises bolted to the right rail 1 through 14 and those bolted to the left rail 1A through 14A.

*Figure 11-1. Platform prepared*




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 7 inches from the front edge. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |
| 2 | 8 | 12 | 18 | Honeycomb | Place four pieces of honeycomb on each side of the platform an equal distance from the side rail and 25 inches from stack 1. |
| | 1 | 44 | 6 | Honeycomb | Center honeycomb over the side stacks as a bridge. |
| | 4 | 12 | 6 | Honeycomb | Place one piece of honeycomb to each side of the side stacks on each side of the bridge. |
| | 6 | 6 | 18 | Honeycomb | Center three pieces of honeycomb on each side of the stack. |
| | 1 | 48 | 24 | 3/4-inch plywood | Place plywood on top of stack with a 7- by 7-inch cutout centered on the rear. |

*Figure 11-2. Honeycomb stacks prepared and positioned*




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 3 | 7 | 36 | 18 | Honeycomb | Center honeycomb on the platform 20 inches from stack 2. |
| | 1 | 36 | 18 | 3/4-inch plywood | Place plywood under the second layer of honeycomb from the top. |
| 4 | 12 | 42 | 12 | Honeycomb | Center honeycomb on the platform 12 inches from stack 3. |
| 5 | 12 | 42 | 18 | Honeycomb | Center honeycomb on the platform flush with the rear edge. |

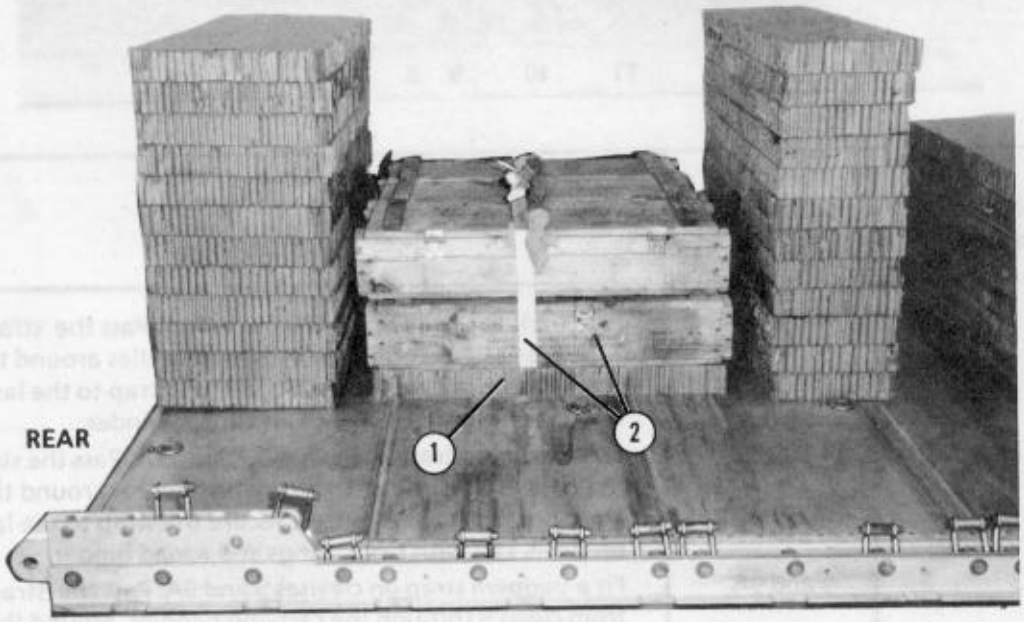
*Figure 11-2. Honeycomb stacks prepared and positioned (continued)*

### 11-4. Stowing Accompanying Load

Make sure the accompanying load meets the size and weight requirements outlined in FM 10-500-2/TO 13C7-1-5. It must not be more than 18 inches high, 36 inches wide, and 40 inches long. The load must not weigh more than 690 pounds or less than 500 pounds. The accompanying load shown here consists of six boxes of ammunition that weigh a total of 660 pounds. Stow the load as shown in Figure 11-3.

**CAUTION**
**ONLY AMMUNITION LISTED IN FM 10-553/TO 13C7-18-41 MAY BE AIRDROPPED.**

**NOTICE OF EXCEPTION:** The procedures shown here are different from those in FM 10-500-2/TO 13C7-1-5. An exception to FM 10-500-2/TO 13C7-1-5 is granted. The procedures shown here MUST be followed.



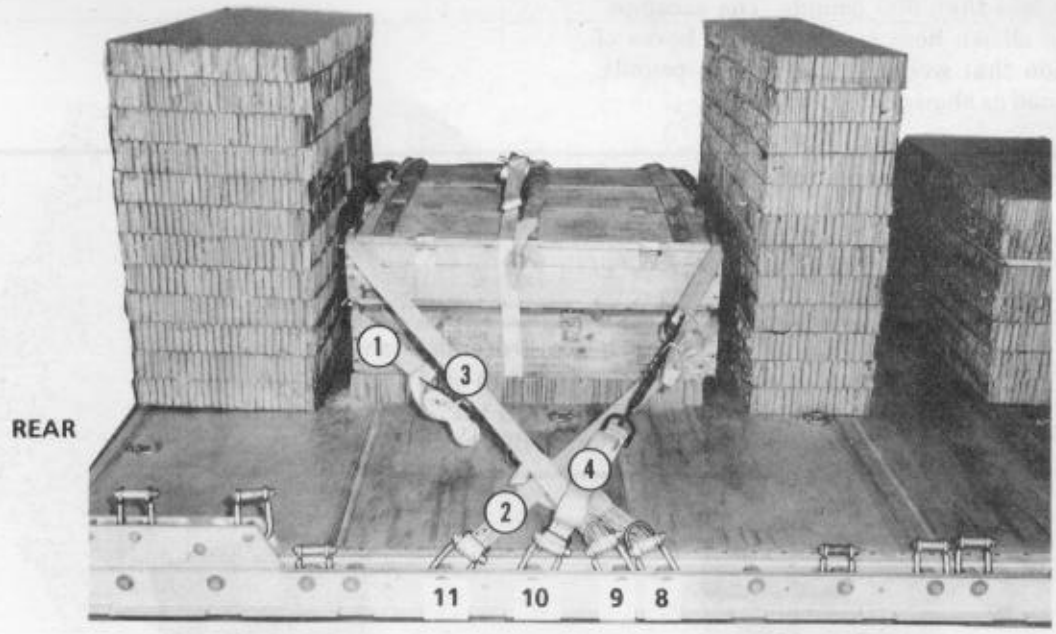

(1) Set a 36- by 36-inch piece of honeycomb between stacks 4 and 5.

(2) Lay a 15-foot tiedown strap across the honeycomb. Set the six ammunition boxes on the honeycomb, and bind the tiedown strap with a D-ring and a load binder.

*Figure 11-3. Accompanying load stowed*

### 11-5. Lashing Accompanying Load

Lash the accompanying load to the platform with eight 15-foot tiedown straps as shown in Figure 11-4.




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| 1 | 8 and 8A | Fit a tiedown strap on clevises 8 and 8A. Pass the strap from clevis 8A through the carrying handles around the rear bottom layer of boxes. Secure the strap to the lashing on clevis 8 with two D-rings and a load binder. |
| 2 | 11 and 11A | Fit a tiedown strap on clevises 11 and 11A. Pass the strap from clevis 11 through the carrying handles around the front bottom layer of boxes. Secure the strap to the lashing on clevis 11A with two D-rings and a load binder. |
| 3 | 9 and 9A | Fit a tiedown strap on clevises 9 and 9A. Pass the strap from clevis 9 through the carrying handles around the rear top layer of boxes. Secure the strap to the lashing on clevis 9A with two D-rings and a load binder. |
| 4 | 10 and 10A | Fit a tiedown strap on clevises 10 and 10A. Pass the strap from clevis 10A through the carrying handles around the front top layer of boxes. Secure the strap to the lashing on clevis 10 with two D-rings and a load binder. |

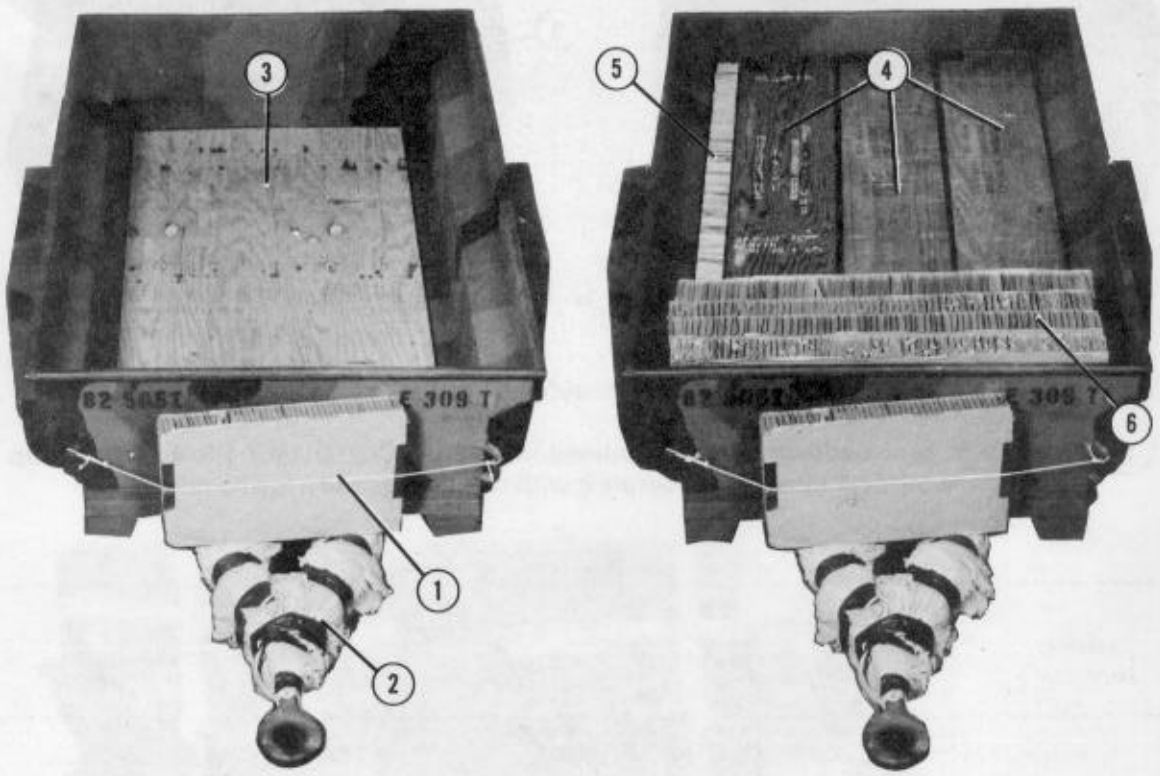
*Figure 11-4. Accompanying load lashed*

## 11-6. Preparing Load

Prepare the load as described below.

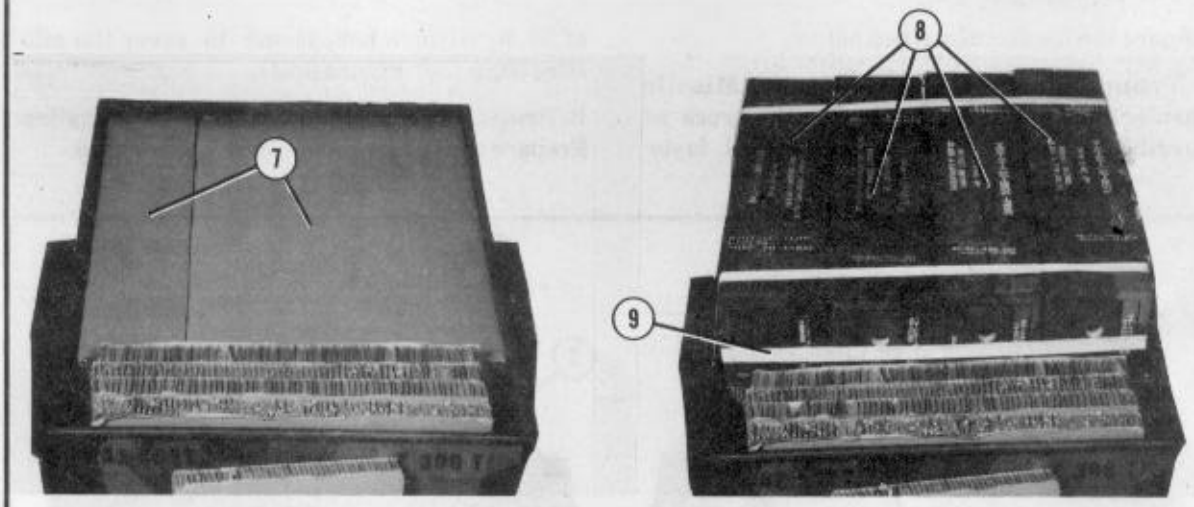
**a. Preparing the M151A2 Truck (Missile Carrier) With Missiles.** Prepare the truck as described in paragraph 9-19. Add a third layer of 36- by 61-inch honeycomb to cover the missiles (step 1 of Figure 9-21).

**b. Preparing the M416 Trailer With Missiles.** Prepare the trailer as shown in Figure 11-5.




1. Tie the hand brake in the unlocked position with type III nylon cord. Cover the brake with a 14- by 24-inch piece of honeycomb, and tie it in place with type III nylon cord.
2. Fold the intervehicular cable. Tie the cable and chains to the drawbar with type III nylon cord. Pad the drawbar with cellulose wadding, and tape the wadding in place.
3. Place a 3/4- by 36- by 70-inch piece of plywood in the trailer bed.
4. Place three boxed missiles against the rear edge of the trailer.
5. Place one 11- by 57-inch piece of honeycomb along one side of the missiles.
6. Set four 18- by 42-inch pieces of honeycomb in front of the missiles.

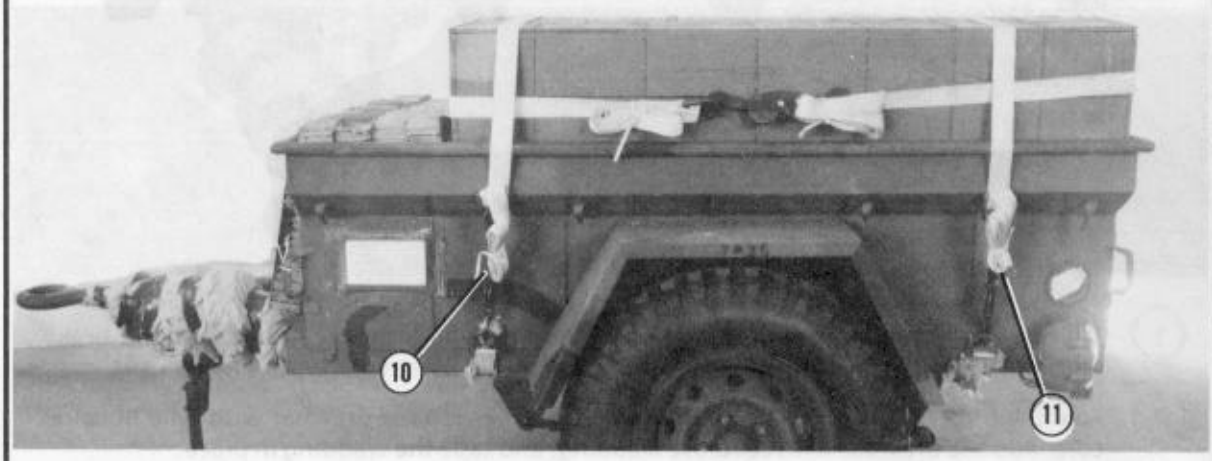
*Figure 11-5. Trailer prepared*




(7) Place one 36- by 57-inch piece and one 12- by 57-inch piece of honeycomb on top of the missiles.

(8) Set four boxed missiles on top of the honeycomb against the rear wall of the trailer.

(9) Form a 30-foot tiedown strap as outlined in FM 10-500-2/TO 13C7-1-5. Run the strap around the top four missiles, and secure it with two D-rings and a load binder.




(10) Run a 15-foot tiedown strap over and around the front of the missiles and under the trailer in front of the front spring bracket. Secure the lashing with two D-rings and a load binder on the side of the trailer.

(11) Run a 15-foot tiedown strap over and around the rear of the missiles and under the trailer in front of the rear spring bracket. Secure the lashing with two D-rings and a load binder on the side of the trailer.

*Figure 11-5. Trailer prepared (continued)*

### 11-7. Positioning Load

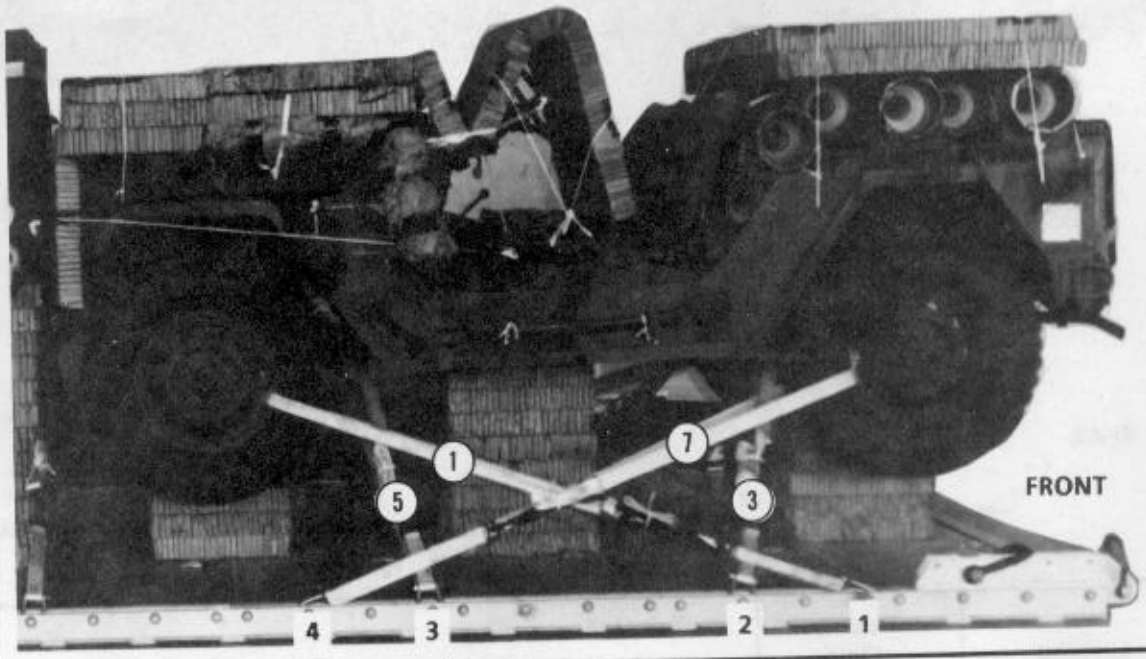
Attach a 12-foot (2-loop), type XXVI nylon sling to each wheel with a screw-pin clevis. Set the truck on the platform with its rear end overhanging the front of the platform by 14 inches. Attach a sling to each trailer handle (on each corner) to position it. Set the trailer on the platform with the lunette overhanging the rear of the platform by 33 inches.

Raise the trailer support leg, and tie it with type III nylon cord.

### 11-8. Lashing Load

Lash the truck and trailer to the platform with sixteen 15-foot tiedown assemblies as shown in Figures 11-6 and 11-7.

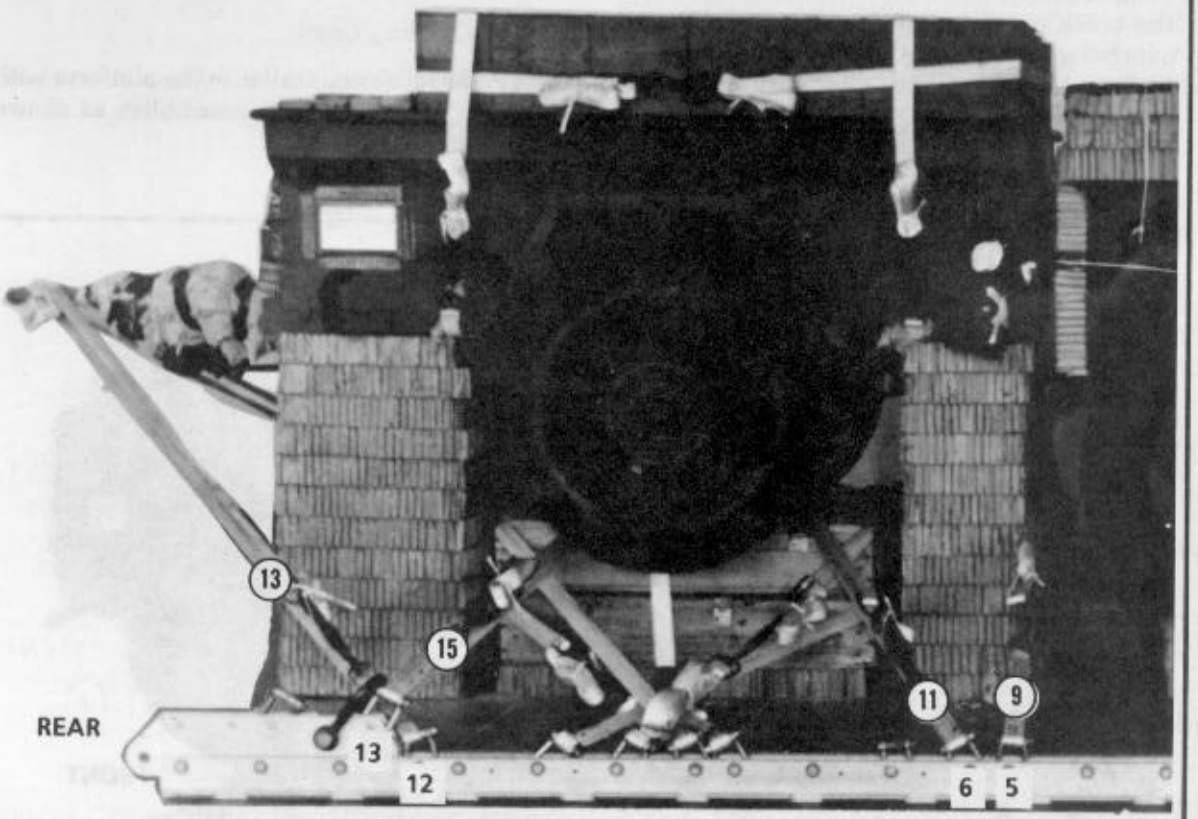
***NOTE: Pad all sharp edges that may touch the lashings.***




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | Through left front wheel. |
| 2 | 1A | Through right front wheel. |
| 3 | 2 | Around inner left rear suspension arm. |
| 4 | 2A | Around inner right rear suspension arm. |
| 5 | 3 | Around left side of mainframe. |
| 6 | 3A | Around right side of mainframe. |
| 7 | 4 | Through left rear wheel. |
| 8 | 4A | Through right rear wheel. |

*Figure 11-6. Lashings 1 through 8 installed on truck*

*NOTE: Pad all sharp edges that may touch the lashings.*




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 9 | 5 | Through left rear lifting handle of trailer. |
| 10 | 5A | Through right rear lifting handle of trailer. |
| 11 | 6 | Around suspension arm behind axle on right side. |
| 12 | 6A | Around suspension arm behind axle on left side. |
| 13 | 12 | Through lunette. |
| 14 | 12A | Through lunette. |
| 15 | 13 | Around suspension arm between shock absorber and axle on right side of trailer. |
| 16 | 13A | Around suspension arm between shock absorber and axle on left side of trailer. |

*Figure 11-7. Lashings 9 through 16 installed on trailer*

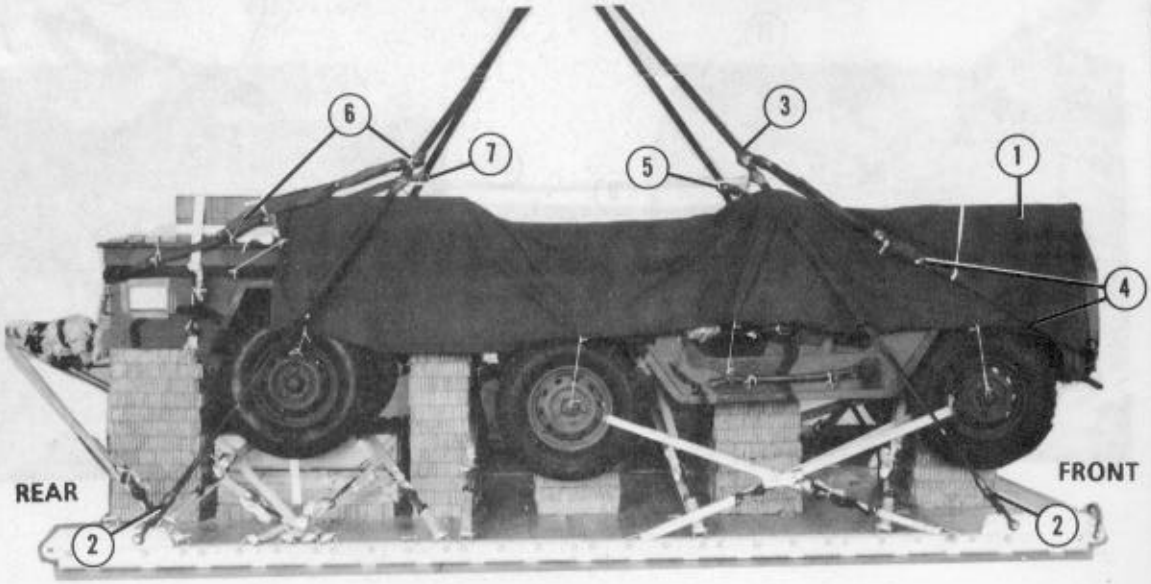
### 11-9. Installing Load Cover

Use a 6- by 16-foot piece of cotton duck cloth to cover the load. Tie the load cover on the load with type III nylon cord as shown in Figure 11-8.

### 11-10. Installing and Safetying Antitumble Slings and Suspension Slings

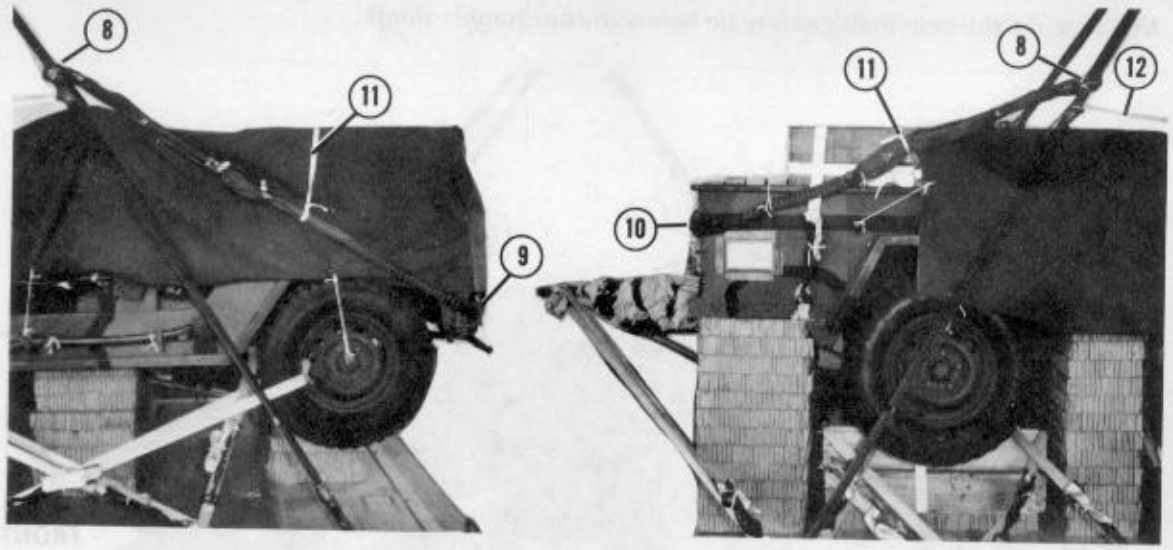
Install and safety antitumble slings and suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-8.

***NOTE: Make the deadman's safety tie below the antitumble slings.***




1. Tie a 6- by 16-foot piece of cotton duck cloth over the load. Secure it to the wheels using type III nylon cord.
2. Attach a 12-foot (2-loop), type XXVI nylon sling (suspension sling) to each tandem link using a large clevis.
3. Pass the right front suspension sling through the loop of a 3-foot (2-loop), type XXVI nylon sling.
4. Attach a 16-foot (2-loop), type XXVI nylon sling to the 3-foot sling with a type IV link (with cover). Pass the free end of the 16-foot sling through the left rear lifting point of the truck, through the towing pintle, and through the right rear lifting point.
5. Pass the left front suspension sling through the loop of a 3-foot (2-loop), type XXVI nylon sling. Attach the 16-foot (2-loop), type XXVI nylon sling (step 4) to the 3-foot sling with a type IV link (with cover).
6. Pass the right rear suspension sling through the loop of a 3-foot sling. Attach a 12-foot (2-loop), type XXVI nylon sling to the 3-foot sling with a type IV link (with cover). Pass the 12-foot sling around the front of the trailer.
7. Pass the left rear suspension sling through the loop of the 12-foot sling.

*Figure 11-8. Antitumble slings and suspension slings installed and safetied*




(8) Tie each antitumble sling at the point that the suspension sling passes through it. Pass a length of 1/2-inch tubular nylon webbing between the plies of the suspension sling below the antitumble sling. Pass both free ends of the tie behind the suspension sling, then back to the front of the sling. Cross the free ends over the antitumble sling, forming an X on the sling. Pass the free ends around the suspension sling and above the antitumble sling. Tie the ends on the top of the sling with a surgeon's knot and an overhand knot in the free ends. Tape the knots and antitumble sling in place. Repeat procedures at each antitumble sling.

(9) Tie the front antitumble sling on each rear bumperette and each set of top bows with one length of 1/2-inch tubular nylon webbing.

(10) Tie the rear antitumble sling to the trailer drawbar with two lengths of 1/2-inch tubular nylon webbing.

(11) Safety the front and rear antitumble slings across the top of the load using two lengths of 1/2-inch tubular nylon webbing.

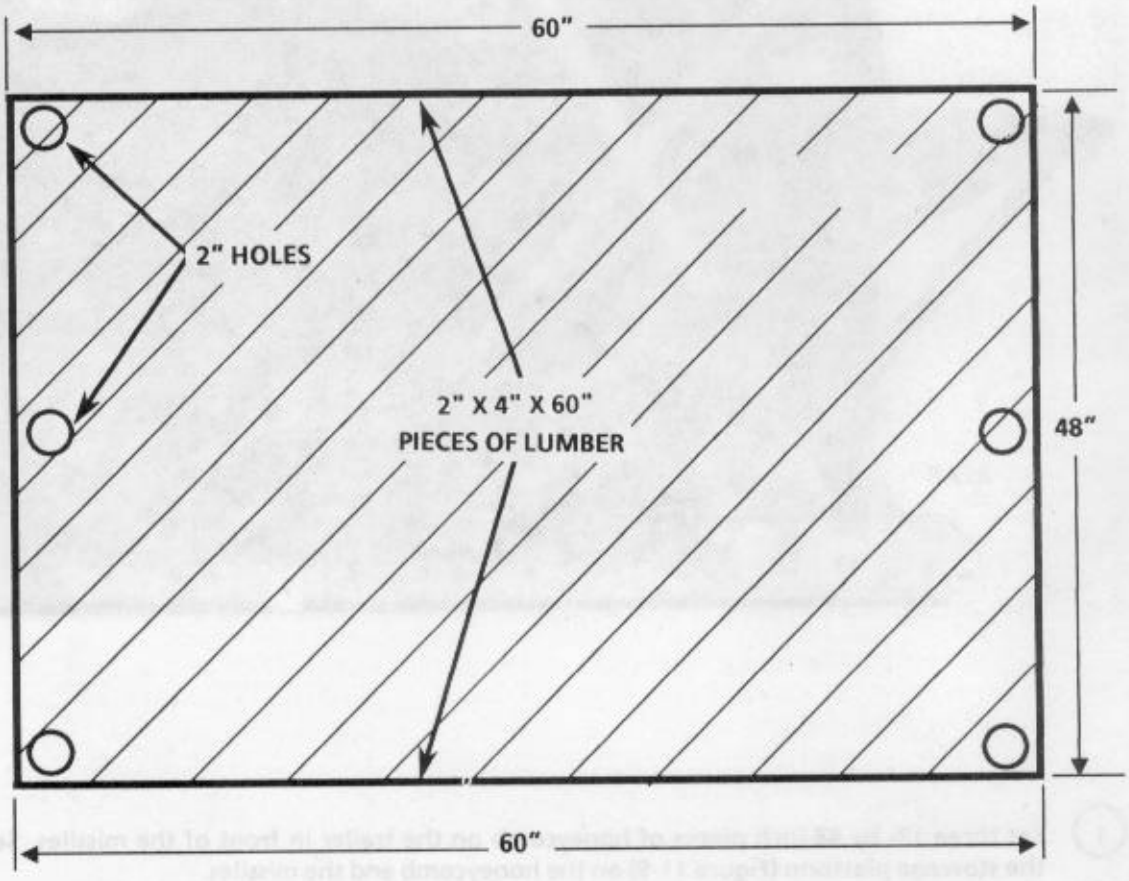
(12) Install the deadman's tie using two lengths of 1/2-inch tubular nylon webbing. Install the tie even with the top of the load and as outlined in FM 10-500-2/TO 13C7-1-5.

*Figure 11-8. Antitumble slings and suspension slings installed and safetied (continued)*

## 11-11. Stowing Cargo Parachutes

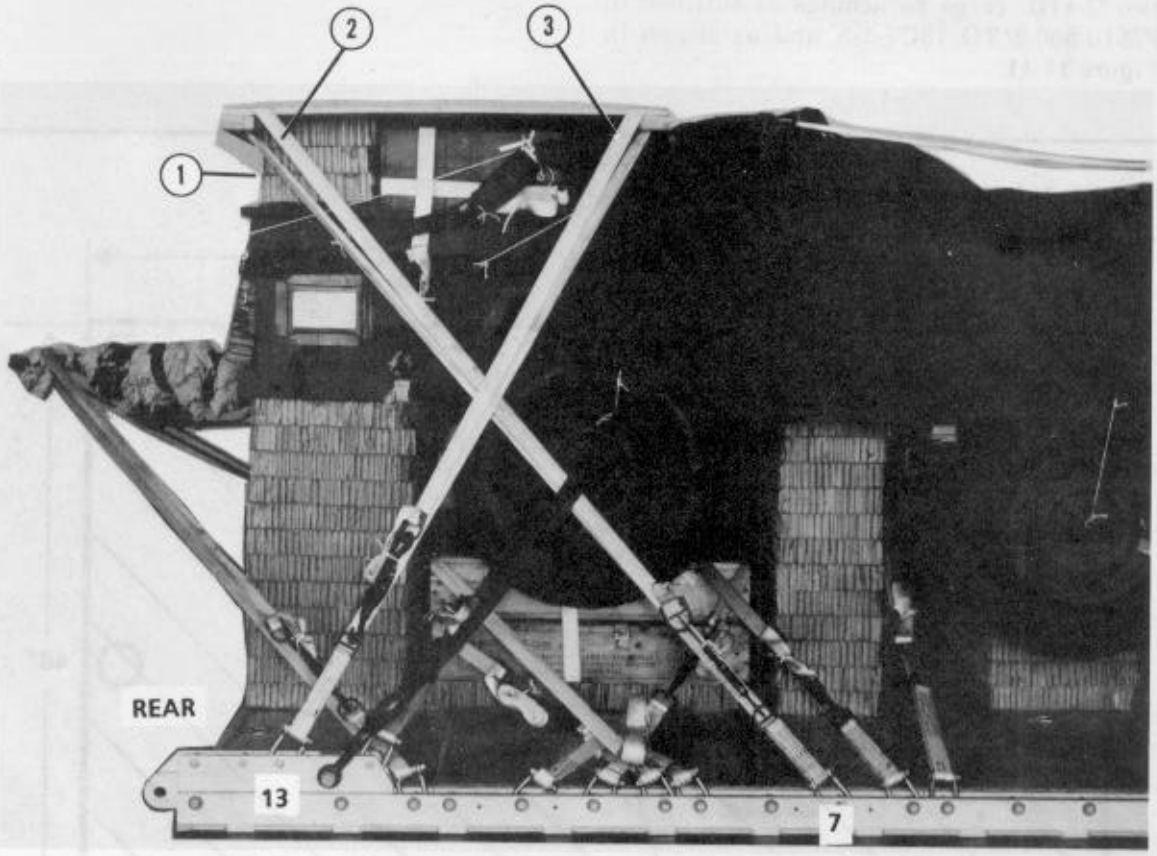
Build a parachute stowage platform as shown in Figure 11-9, and install it as shown in Figure 11-10. Prepare and stow two G-11A or two G-11B cargo parachutes as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-11.

***NOTE: This drawing is not drawn to scale.***




(1) Use one 3/4- by 48- by 60-inch piece of plywood and two 2- by 4- by 60-inch pieces of lumber to make a parachute stowage platform. Nail one piece of lumber to each 60-inch edge of the plywood using sixpenny nails. Make three 2-inch holes 3 inches from each 48-inch edge of the plywood.

*Figure 11-9. Parachute stowage platform constructed*

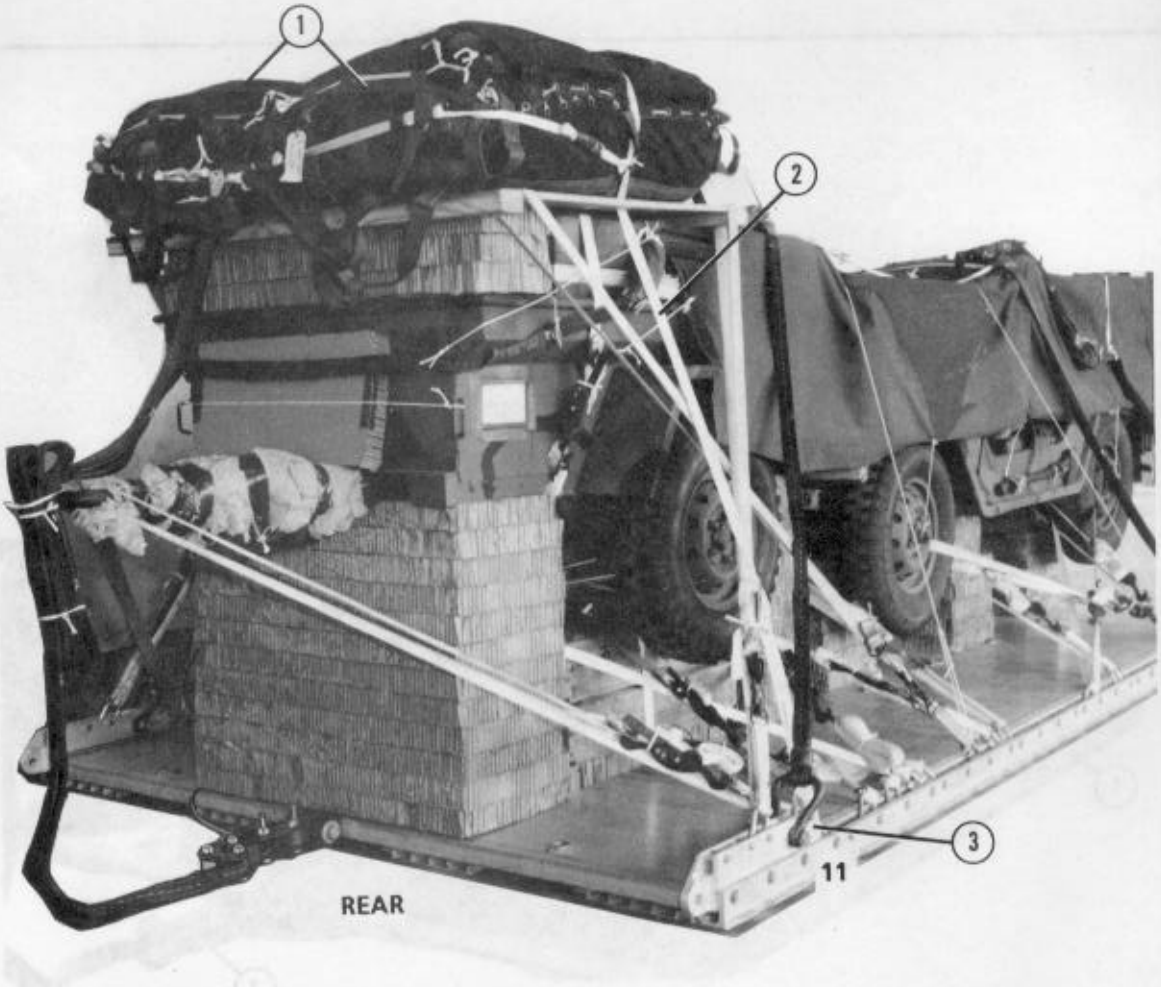



(1) Set three 12- by 48-inch pieces of honeycomb on the trailer in front of the missiles. Set the stowage platform (Figure 11-9) on the honeycomb and the missiles.

(2) Use two tiedown assemblies. Lash the parachute stowage platform to the load by routing one tiedown assembly from clevis 7 through the left rear hole of the parachute stowage platform. Make sure the tiedown assembly is run under the suspension sling. Pass the other tiedown assembly from clevis 7A through the right rear hole of the stowage platform.

(3) Run two more tiedown assemblies through the front holes of the parachute stowage platform and clevises 13 and 13A as in step 2.

*Figure 11-10. Parachute stowage platform installed*




(1) Place two G-11A or G-11B cargo parachutes on top of the parachute stowage platform.

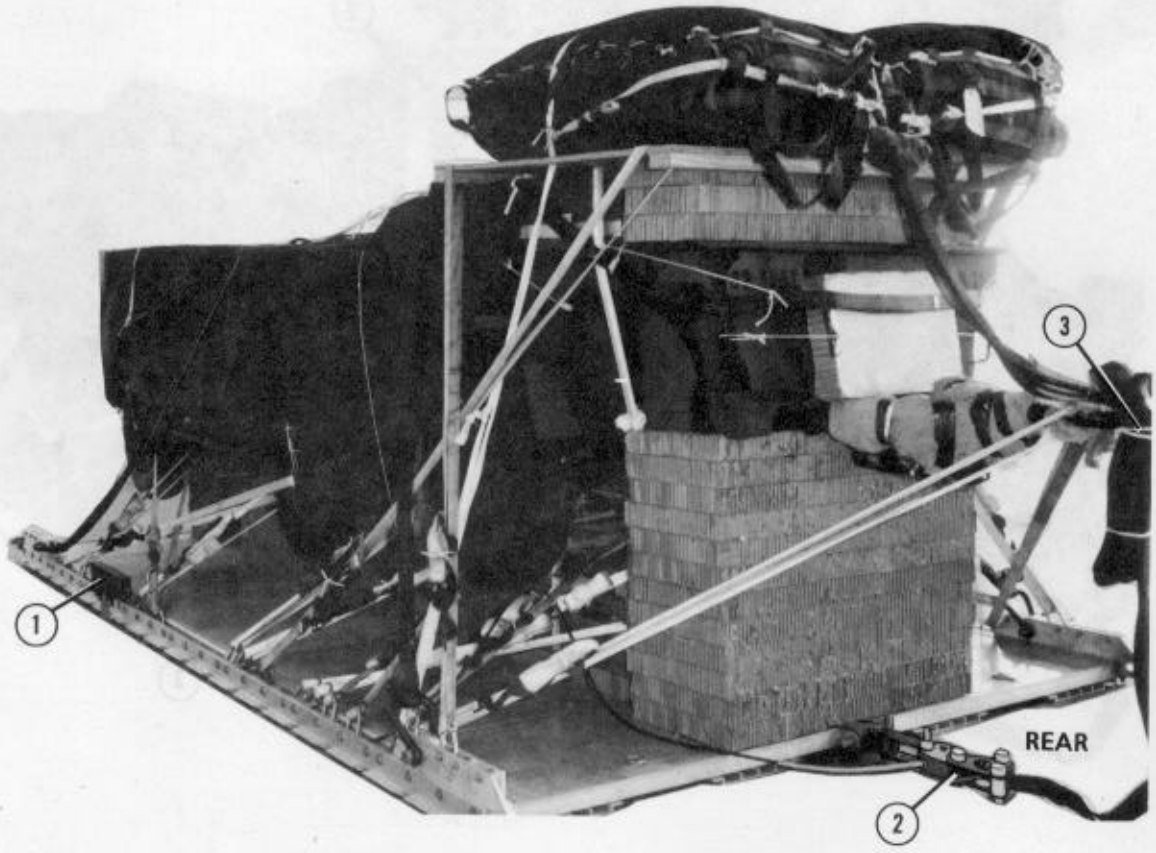
(2) Run a 10-yard length of type VIII nylon webbing over the parachutes and through the two middle holes of the stowage platform to restrain the parachutes.

(3) Tie the restraint strap to clevises 11 and 11A.

*Figure 11-11. Cargo parachutes stowed*

### 11-12. Installing Extraction System

Install the EFTC extraction system on this load according to FM10-500-2/TO 13C7-1-5 and as shown in Figure 11-12.




(1) Bolt the actuator to the rear actuator holes on the left side of the platform.

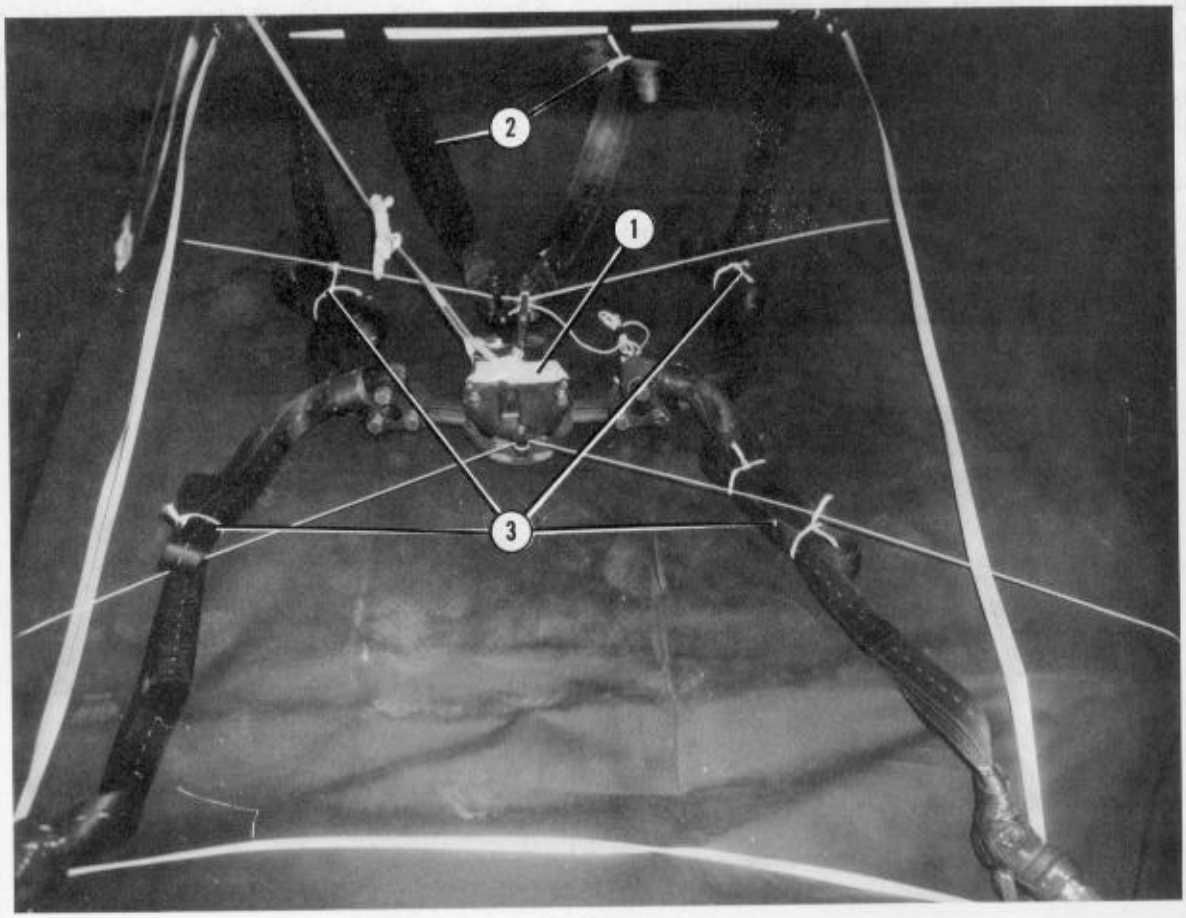
(2) Install the EFTC according to FM 10-500-2/TO 13C7-1-5. Use a 9-foot (2-loop), type XXVI nylon sling as the deployment line. Safety the deployment line to the lunette using 80-pound cotton webbing.

(3) Fold the excess deployment line, and tie the folds in place with 80-pound cotton webbing.

*Figure 11-12. EFTC installed*

### 11-13. Installing Release System

Prepare, attach, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-13.




(1) Center the M-1 cargo parachute release on top of the load, and attach the parachute risers and suspension slings.

(2) Fold the excess parachute risers, and tie the folds in place.

(3) Fold the excess suspension slings, and tie the folds in place with 80-pound cotton webbing.

*Figure 11-13. M-1 release system installed*

### 11-14. Placing Extraction Parachute

Place an extraction parachute on the load as described below.

**a. C-130 Aircraft.** Place an unreefed 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

**b. C-141 Aircraft.** Place an unreefed 15-foot cargo extraction parachute with a 36-inch adapter web and a continuous 160-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

### 11-15. Installing Emergency Restraints

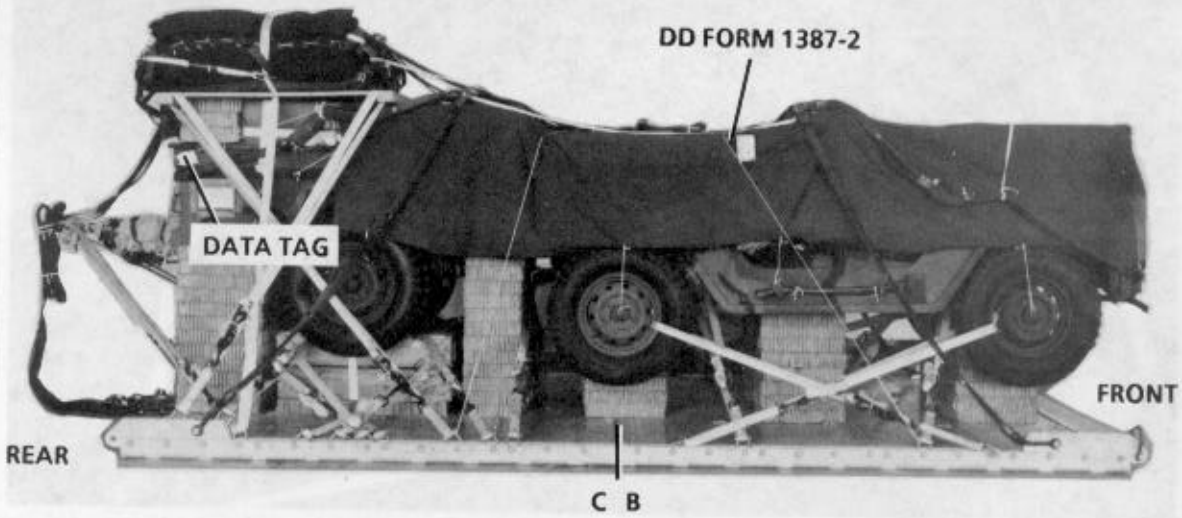
Install a medium clevis in the front hole of each front tandem link for emergency restraint.

### 11-16. Marking Rigged Load

Mark the rigged load as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-14. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the vehicle fuel tank and battery have been prepared according to AFR 71-4/TM 38-250. If the load varies from that shown, the weight, CB, and parachute requirements must be recomputed.

**CAUTION**

**MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500-2/TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.**




**RIGGED LOAD DATA**

| | | |
|---|---|---|
| Weight: | Load shown | 7,280 pounds |
| | Maximum allowed | 8,480 pounds |
| Height | | 91 inches |
| Width | | 108 inches |
| Length | | 239 inches |
| Overhang: | Front | 14 inches |
| | Rear | 33 inches |
| CB (from front edge of platform) | | 109 inches |

*Figure 11-14. M151A2 truck and M416 trailer with accompanying load rigged for low-velocity airdrop on a type V platform*

### 11-17. Equipment Required

Use the equipment listed in Table 11-1 to rig this load. This table also includes the equipment needed to stow the accompanying load of ammunition.

*Table 11-1. Equipment required for rigging the M151A2 truck and M416 trailer with accompanying load for low-velocity airdrop on a type V platform*

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-360-0304 | 5/8-in (small) | 4 |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 8305-00-242-3593 | Cloth, cotton duck, 60-in | 16 ft |
| 4020-00-240-2146 | Cord, nylon, type III, 550-lb | As required |
| 1670-00-434-5783 | Coupling, airdrop, extraction force transfer w 12-ft cable | 1 |
| 1670-00-360-0329 | Cover, link, type IV | 1 |
| 1670-00-360-0328 | Cover, clevis, large | 2 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 5365-00-937-0147 | D-ring, heavy-duty, 10,000-lb | 33 |
| 8305-00-958-3685 | Felt, 1/2- by 6- by 6-in | 2 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing (for C-130) or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing(for C-130) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing (for C-141) | 1 |
| 1670-00-783-5988 | Link assembly, type IV (for extraction line) | 1 |
| 1670-00-217-2421 | Link, L-bar type | 2 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in: | 18 sheets |
| | 4- by 26-in | (1) |
| | 6- by 18-in | (6) |
| | 11- by 57-in | (1) |
| | 12- by 6-in | (4) |
| | 12- by 18-in | (8) |
| | 12- by 48-in | (3) |
| | 12- by 57-in | (1) |
| | 12- by 61-in | (1) |
| | 14- by 24-in | (1) |
| | 18- by 61-in | (4) |
| | 24- by 61-in | (2) |
| | 36- by 18-in | (14) |
| | 36- by 36-in | (1) |
| | 36- by 50-in | (1) |
| | 36- by 57-in | (1) |
| | 36- by 61-in | (2) |

*Table 11-1. Equipment required for rigging the M151A2 truck and M416 trailer with accompanying load for low-velocity airdrop on a type V platform (continued)*

| National Stock Number | Item | Quantity |
|---|---|---|
| | 42- by 12-in | (12) |
| | 42- by 18-in | (16) |
| | 44- by 6-in | (1) |
| 1670-01-183-2678 | Panel, sling, extraction line | 2 |
| | Parachute, | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 2 |
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft (unreefed) | 1 |
| | Platform, AD, type V, 16-ft: | |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | 1 |
| 1670-01-162-2374 | Outside EFTA | 1 |
| 1670-01-162-2385 | Bumper, nose | 1 |
| 1670-01-162-2372 | Clevis, load tiedown | 28 |
| 1670-01-162-2376 | Extraction bracket assembly | 1 |
| 1670-01-162-2381 | Tandem link | 4 |
| | Platform, parachute, stowage: | |
| 5510-00-220-6146 | Lumber, 2- by 4- by 60-in | 2 |
| 5315-00-010-4659 | Nail, steel wire, common, 8d | As required |
| 5530-00-128-4981 | Plywood, 3/4- by 48- by 60-in | 1 |
| 5530-00-128-4981 | Plywood, 3/4-in: | |
| | 36- by 18-in | 2 |
| | 36- by 70-in | 1 |
| | 48- by 24-in | 1 |
| 1670-01-097-8816 | Release, cargo, parachute, M-1 | 1 |
| | Sling, cargo, airdrop: | |
| 1670-00-753-3788 | 3-ft (3-loop), type X nylon webbing or | 2 |
| 1670-01-062-6301 | 3-ft (2-loop), type XXVI nylon webbing | 2 |
| 1670-00-823-5041 | 12-ft (3-loop), type X nylon webbing or | 5 |
| 1670-01-062-6303 | 12-ft (2-loop), type XXVI nylon webbing | 5 |
| 1670-00-823-5042 | 16-ft (3-loop), type X nylon webbing or | 2 |
| 1670-01-063-7761 | 16-ft (2-loop), type XXVI nylon webbing | 2 |
| 1670-00-823-5043 | 20-ft (3-loop), type X nylon webbing or | 2 |
| 1670-01-062-6302 | 20-ft (2-loop), type XXVI nylon webbing | 2 |
| 1670-00-040-8219 | Strap, parachute release, multicut comes w 3 knives | 1 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft, 10,000-lb | 33 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, 80-lb | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, 1,000-lb, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII, 3,600-lb | 10 yd |

# CHAPTER 12

# RIGGING TOW MISSILES IN BOXES ON THE TYPE V AIRDROP PLATFORM

## Section I

## RIGGING MISSILES FOR LOW-VELOCITY AIRDROP

### 12-1. Description of Load

Forty-eight boxed missiles are rigged on a 12-foot, type V airdrop platform. Each boxed missile weighs 87 pounds and is 57 1/2 inches long, 12 inches high, and 12 inches wide. The rigged load requires two G-11A or two G-11B parachutes. This load can be airdropped from a C-130 or a C-141 aircraft.

### 12-2. Preparing Platform

Prepare a 12-foot, type V airdrop platform as described below.

**a. Assembling and Inspecting Platform.** Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.

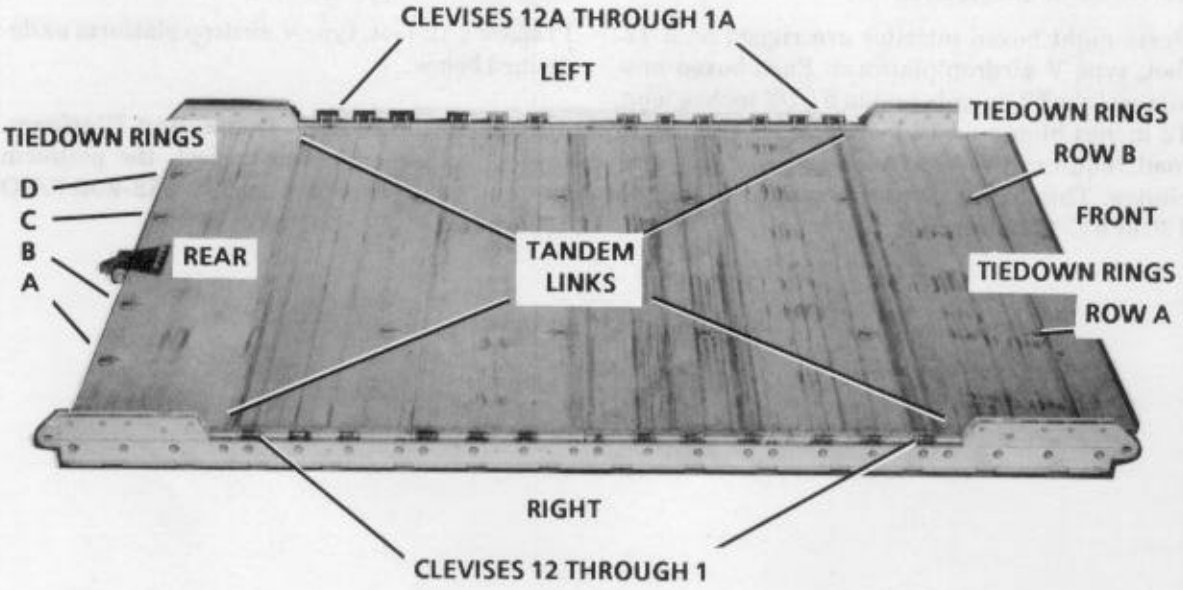
**b. Installing Tandem Links.** Attach a tandem link on the front and rear of each rail as shown in Figure 12-1.

**c. Attaching and Numbering Clevises.** Bolt 24 tiedown clevises to the side rail bushings according to TM 10-1670-268-20&P/ TO 13C7-52-22. Number the clevises as shown in Figure 12-1.

*NOTES:*

*1. The nose bumper may or may not be installed.*

*2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.*



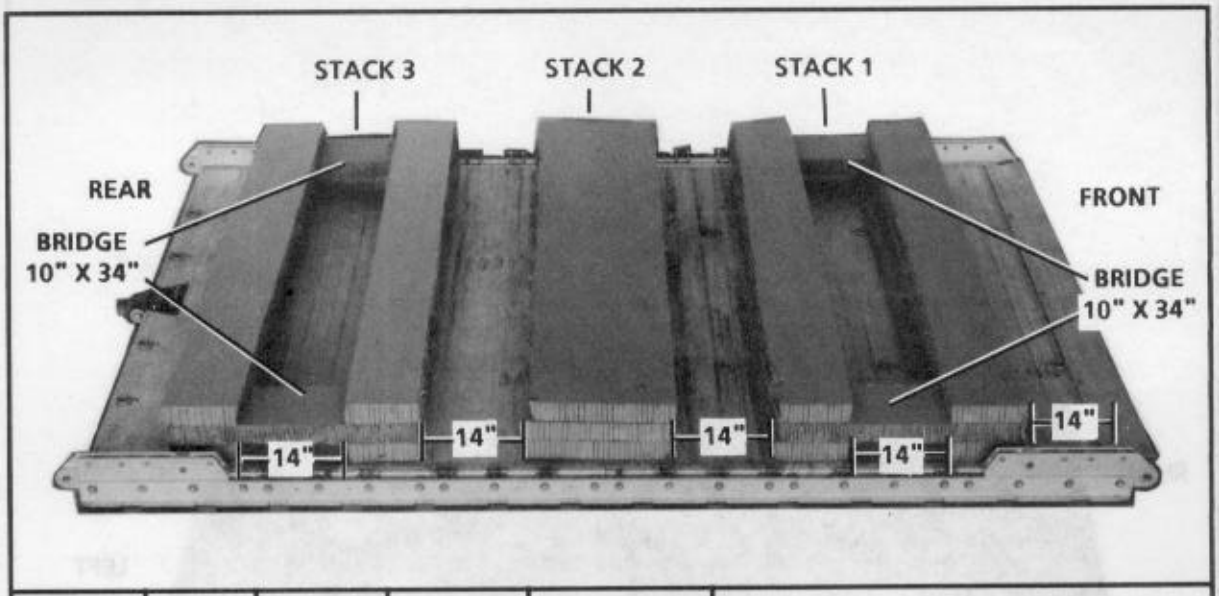

Step:

1. Starting at bushing 1 behind each front tandem link, attach a clevis to bushings 2, 3, 4, 6, 7, 8, 11, 12, 13, 15, 16, and 17.
2. Starting at the front of the platform, number the clevises bolted to the right rail 1 through 12 and those bolted to the left rail 1A through 12A.
3. Starting at the front of the platform, number the tiedown rings 1 through 6. Label the rows A and B from right to left. Label the tiedown rings on the last panel A, B, C, and D from right to left.

*Figure 12-1. Platform prepared*

### 12-3. Building and Placing Honeycomb Stacks

Build the honeycomb stacks and place them on the platform as shown in Figures 12-2 and 12-3.




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 2 | 96 | 10 | Honeycomb | Place one piece 14 inches from the front edge of the platform. Place another piece 14 inches from the first piece. |
| | 2 | 10 | 34 | Honeycomb | Place one piece on top of each end of the two base pieces as a bridge. |
| | 2 | 76 | 10 | Honeycomb | Place on base pieces of honeycomb between each bridge |
| | 2 | 96 | 10 | Honeycomb | Place one piece on top of each base piece. |
| 2 | 3 | 96 | 20 | Honeycomb | Center honeycomb on the platform 14 inches from stack 1. |
| 3 | 2 | 96 | 10 | Honeycomb | Place one piece 14 inches from stack 2.Place another piece 14 inches from the first piece. |
| | 2 | 10 | 34 | Honeycomb | Place one piece on top of each end of the two base pieces as a bridge. |
| | 2 | 76 | 10 | Honeycomb | Place on base pieces of honeycomb between each bridge. |
| | 2 | 96 | 10 | Honeycomb | Place one piece on top of each base piece. |

*Figure 12-2. Honeycomb stacks prepared and positioned*

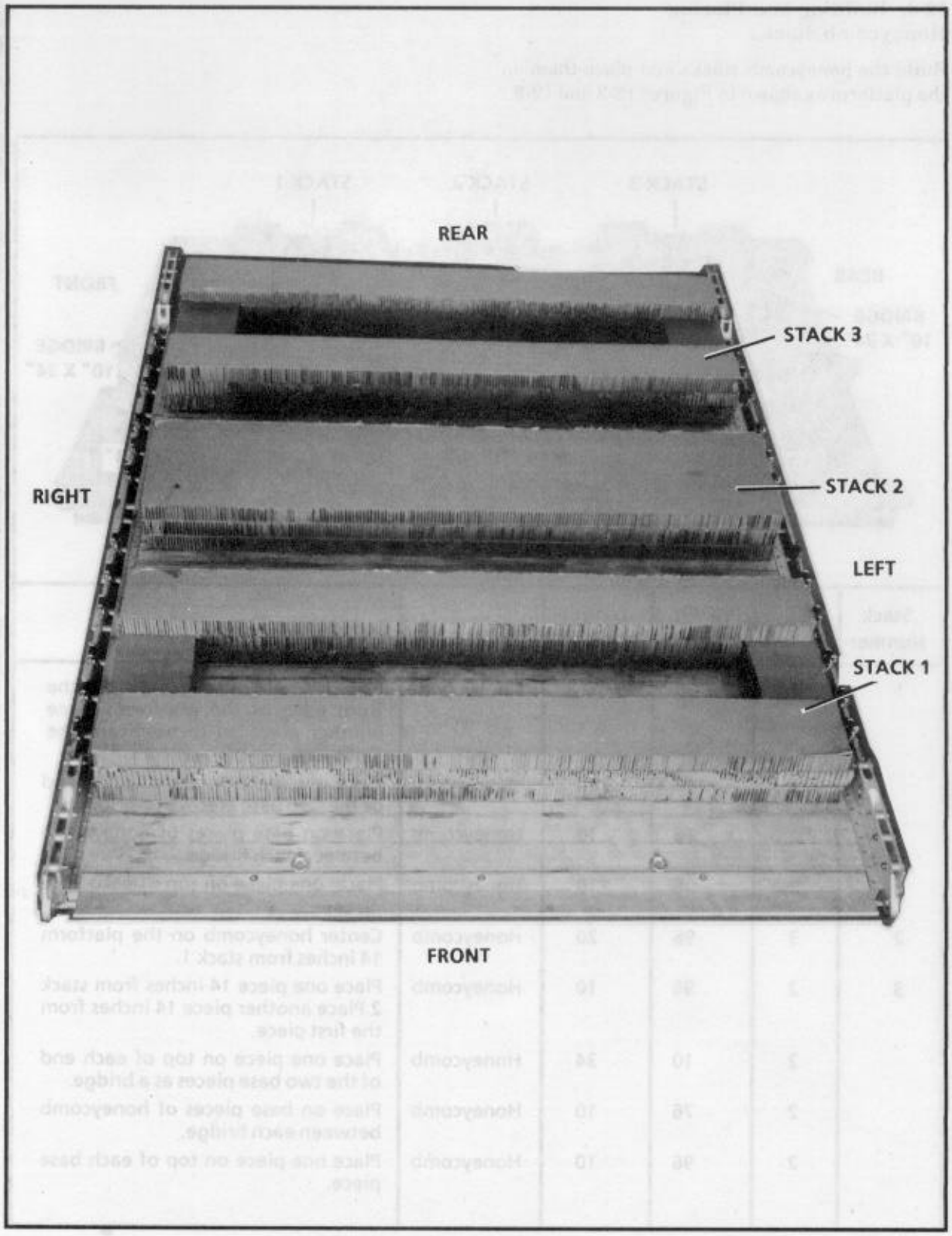
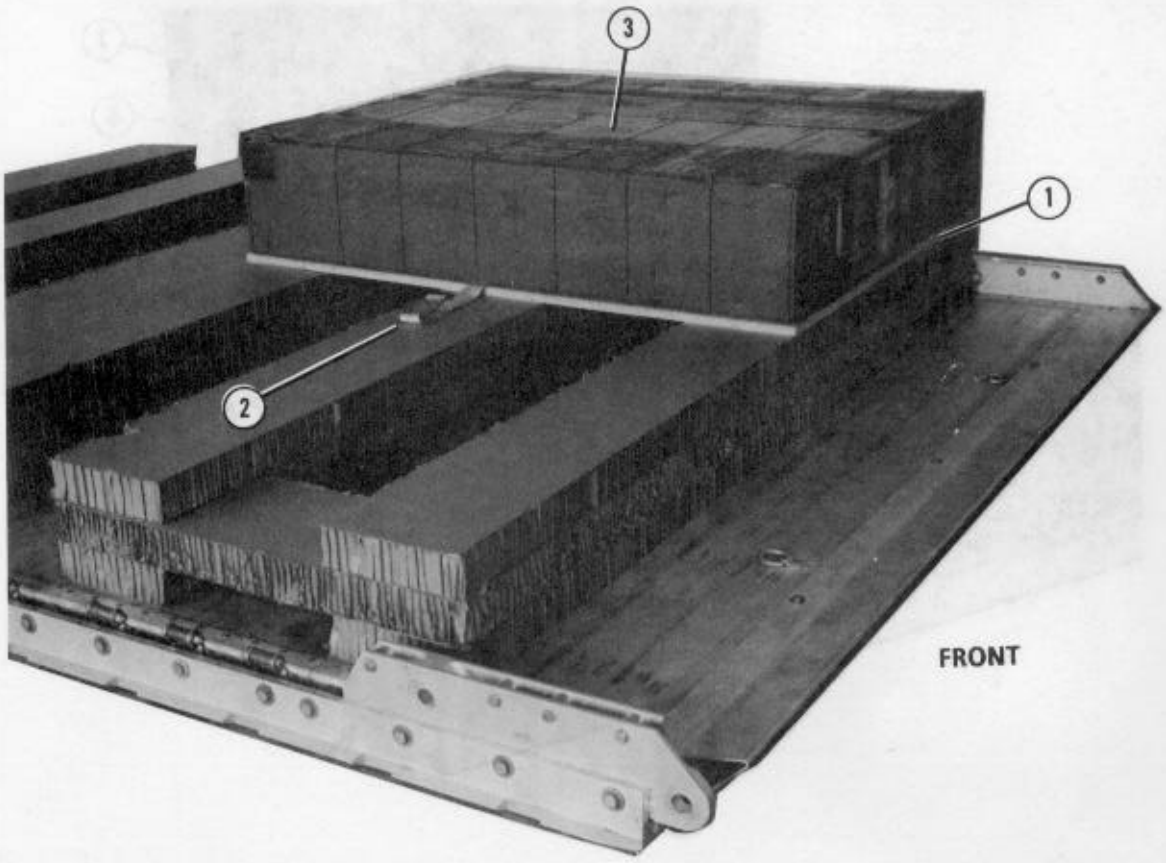



*Figure 12-3. Front view of honeycomb stacks*

## 12-4. Preparing Load

Prepare and position the missiles as shown in Figure 12-4.

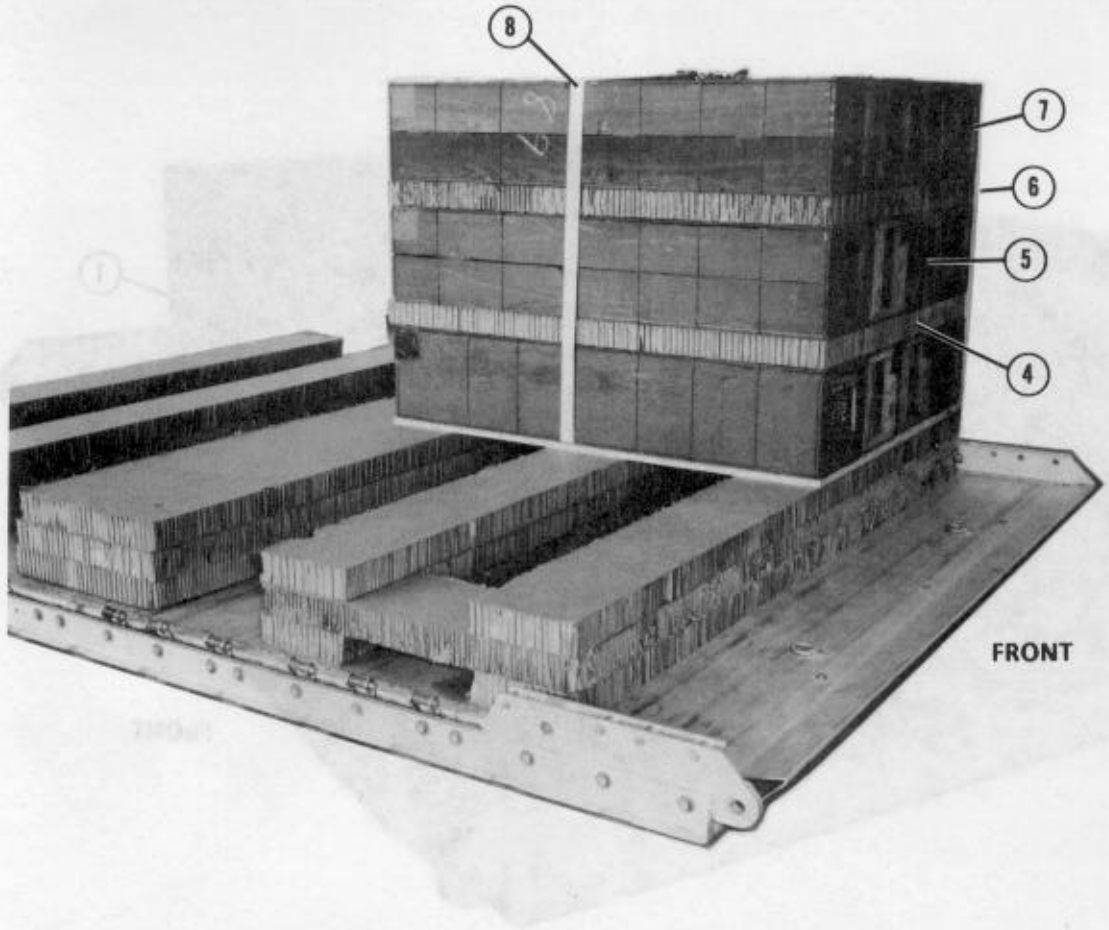



(1) Place a piece of 3/4- by 48- by 58-inch plywood on top of stacks 1 and 2 so that it is flush with the front and left side of stack 1.

(2) Lay a 15-foot tiedown strap across the plywood.

(3) Set four boxed missiles on the plywood.

*Figure 12-4. Missile stacks prepared*




(4) Form a layer of honeycomb on top of the missiles with one 36- by 48-inch piece and one 22- by 48-inch piece of honeycomb.

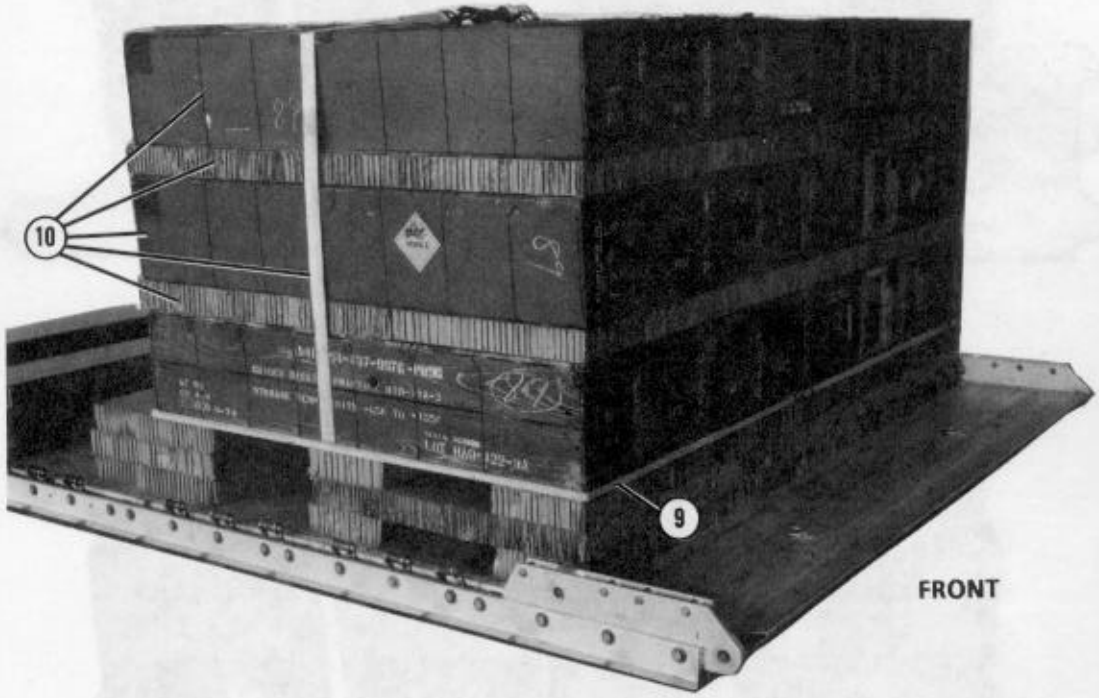
(5) Place four boxed missiles on the honeycomb.

(6) Form another honeycomb layer with one 36- by 48-inch piece and one 22- by 48-inch piece of honeycomb on top of the missiles.

(7) Place four boxed missiles on the second layer of honeycomb.

(8) Bind the missiles together with the pre-positioned tiedown strap.

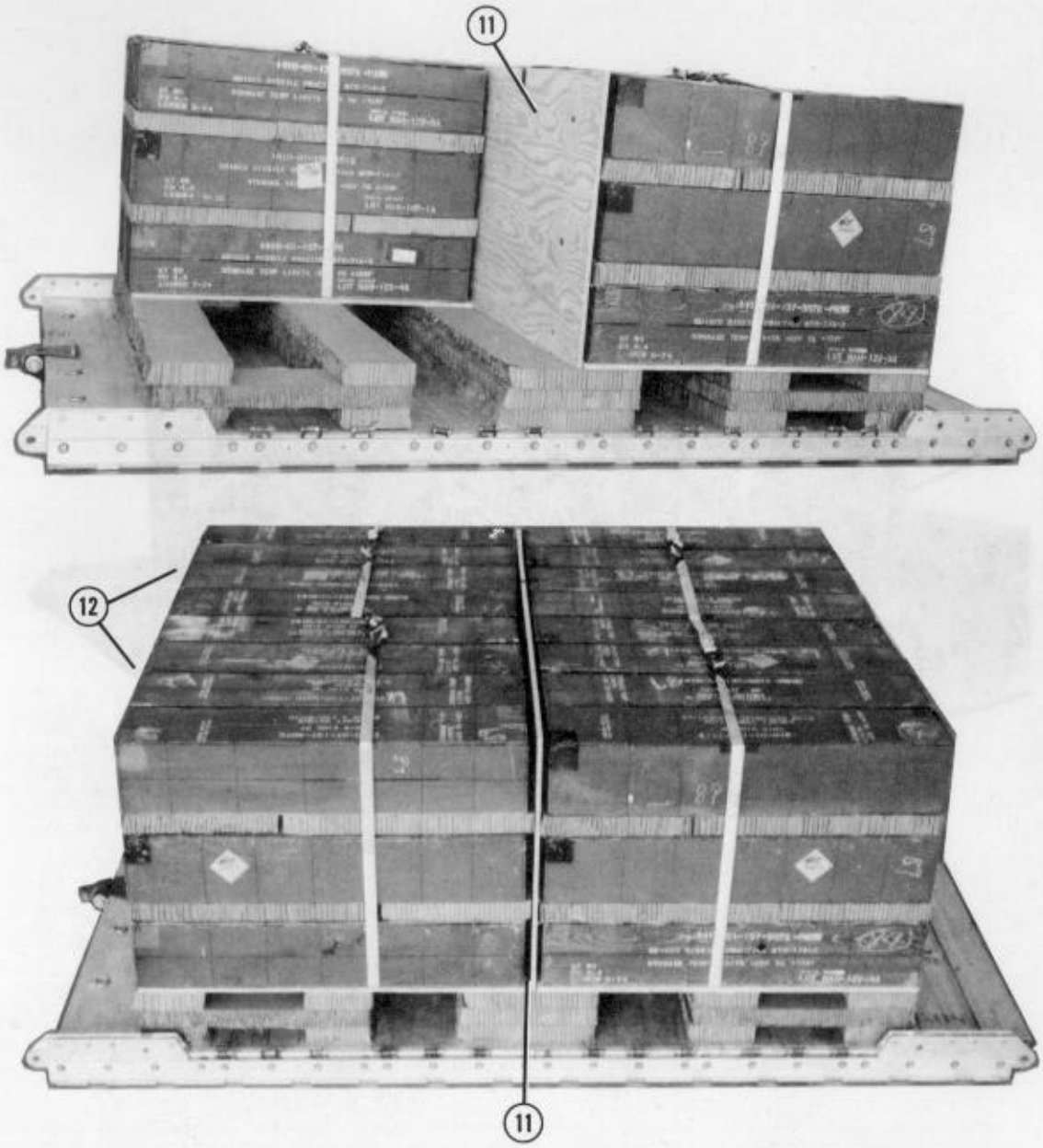
*Figure 12-4. Missile stacks prepared (continued)*




(9) Place a piece of 3/4- by 48- by 58-inch plywood on top of stacks 1 and 2 so that it is flush with the front and right side of stack 1.

(10) Repeat steps 2 through 8 to position another 12 boxed missiles on the platform.

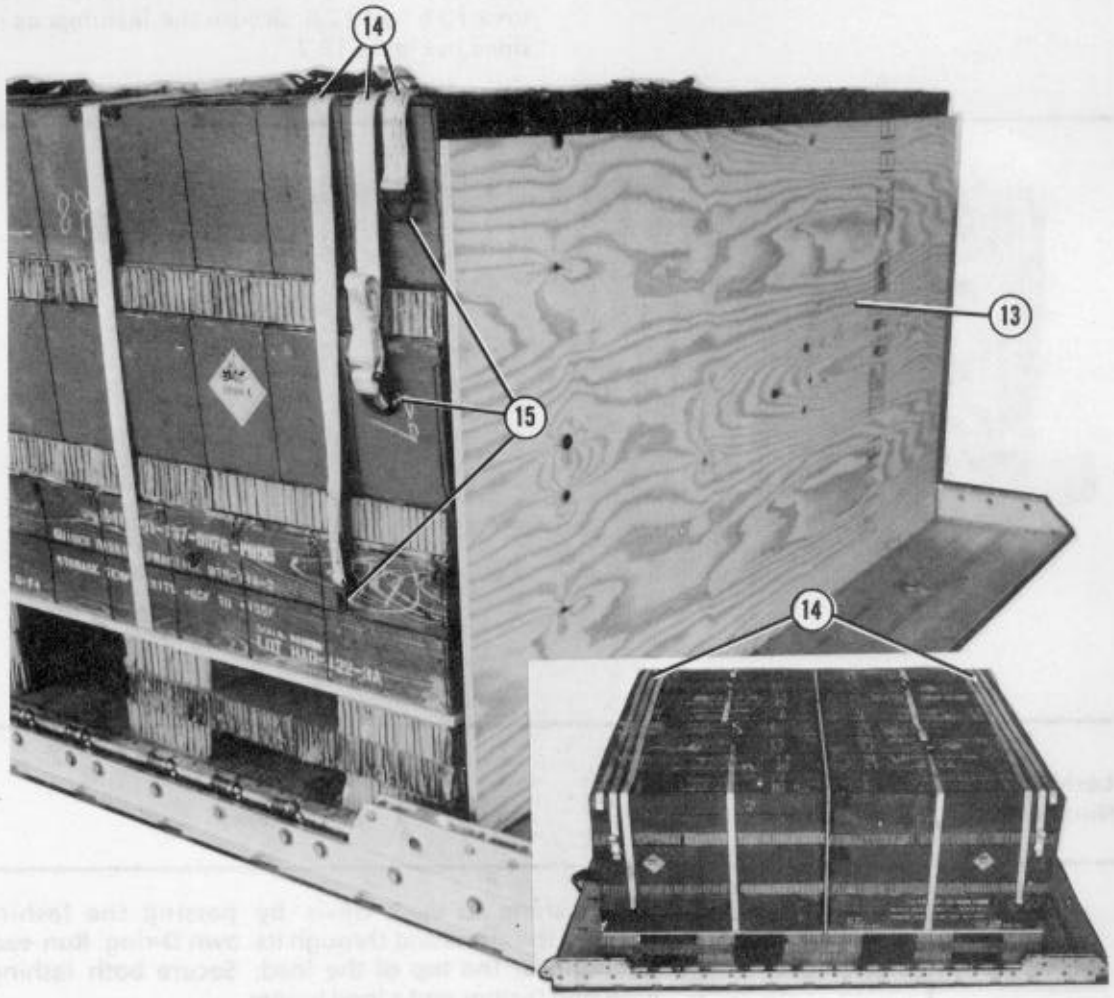
*Figure 12-4. Missile stacks prepared (continued)*




(11) Place a 3/4- by 42- by 96-inch piece of plywood on edge and on top of honeycomb stack 2 against the rear of the first two stacks of missiles.

(12) Adapt steps 1 through 10 to rig the two rear stacks (12 missiles each) of missiles on the rear of the platform.

*Figure 12-4. Missile stacks prepared (continued)*




(13) Place a 3/4- by 48- by 96-inch piece of plywood against the front edge of honeycomb stack 1 and the missiles. Place another 3/4- by 48- by 96-inch piece of plywood against the rear edge of honeycomb stack 3 and the missiles.

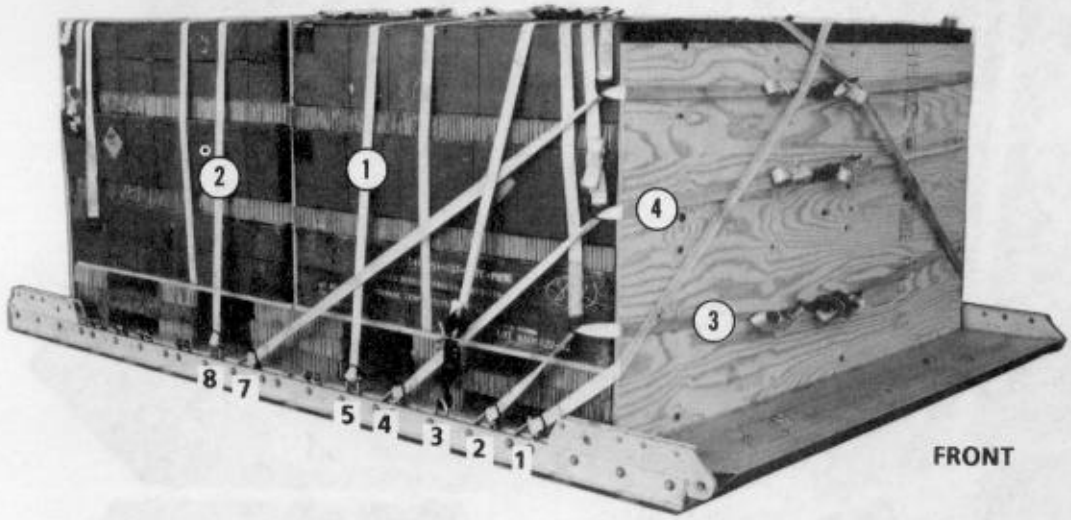
(14) Lay three 15-foot tiedown straps side by side across the front edges of the missiles. Lay three 15-foot tiedown straps side by side across the rear edges of the missiles.

(15) Fit a D-ring on each strap, and adjust the D-rings so that one is at the center of each layer of missiles.

*Figure 12-4. Missile stacks prepared (continued)*

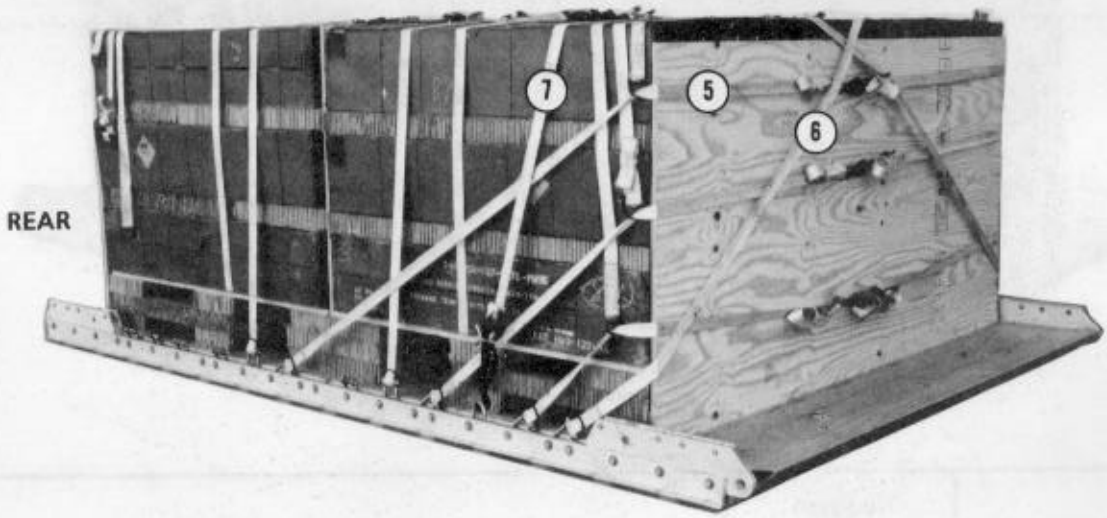
### 12-5. Lashing Load

Lash the load to the platform as shown in Figures 12-5 and 12-6. Secure the lashings as outlined in Figure 12-7.



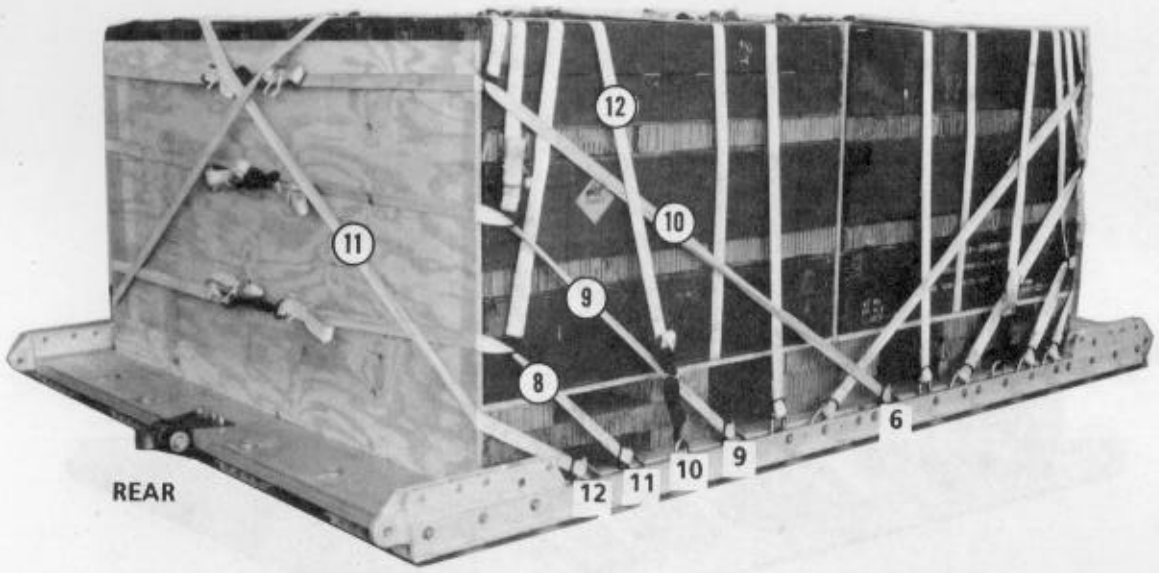

| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| 1 | 5 and 5A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing over the top of the load. Secure both lashings with two D-rings and a load binder. |
| 2 | 8 and 8A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing over the top of the load. Secure both lashings with two D-rings and a load binder. |
| 3 | 2 and 2A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the bottom layer of missiles. Run each lashing to the front of the plywood, and secure the lashings with two D-rings and a load binder. |
| 4 | 4 and 4A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the middle layer of missiles. Run each lashing to the front of the plywood, and secure the lashings with two D-rings and a load binder. |

*Figure 12-5. Lashings 1 through 7 installed*



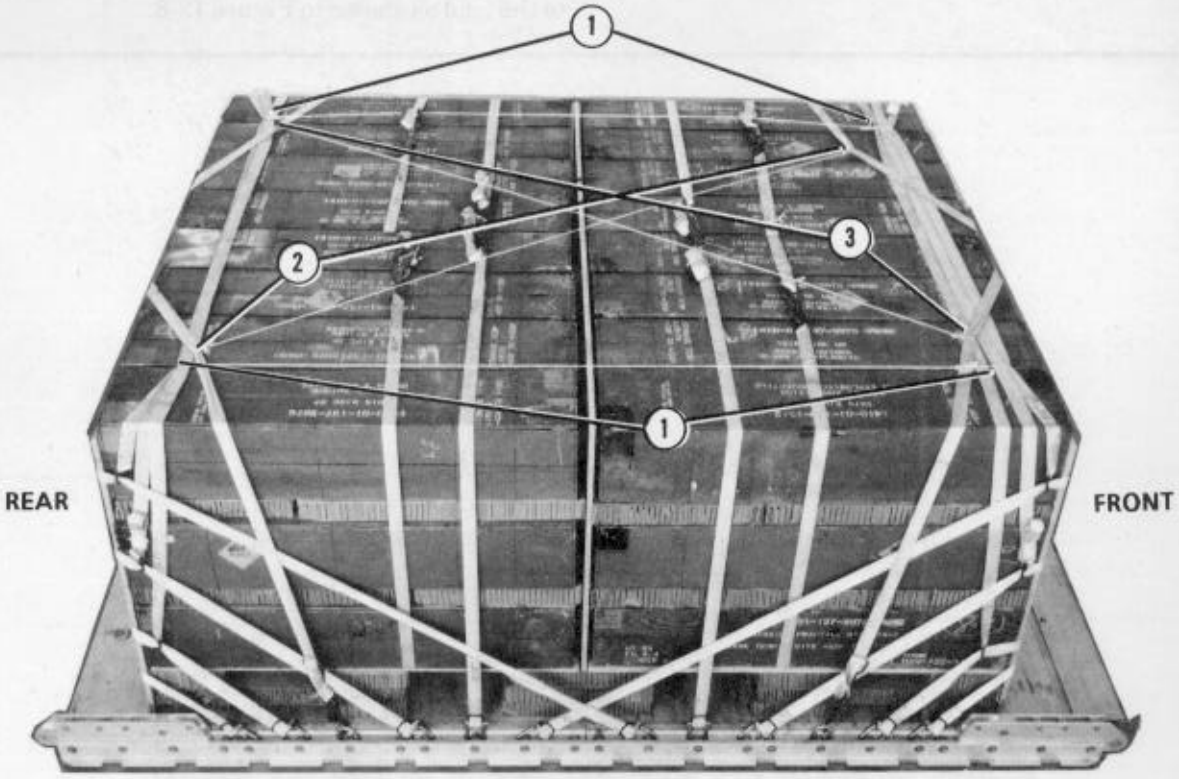

| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| 5 | 7 and 7A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the top layer of missiles. Run each lashing to the front of the plywood, and secure the lashings with two D-rings and a load binder. |
| 6 | 1 and 3A | Fit a lashing to clevis 1 by passing the lashing through its own D-ring. Run the lashing around the front of the plywood and over the top of the missiles. Attach a D-ring to the free end of the lashing, and secure it to clevis 3A with a load binder. |
| 7 | 1A and 3 | Fit a lashing through clevis 1A by passing the lashing through its own D-ring. Run the lashing around the front of the plywood and over the top of the missiles. Attach a D-ring to the free end of the lashing, and secure it to clevis 3 with a load binder. |

*Figure 12-5. Lashings 1 through 7 installed (continued)*




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| 8 | 11 and 11A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the bottom layer of missiles. Run each lashing to the rear of the plywood, and secure the lashings with two D-rings and a load binder. |
| 9 | 9 and 9A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the middle layer of missiles. Run each lashing to the rear of the plywood, and secure the lashings with two D-rings and a load binder. |
| 10 | 6 and 6A | Fit a lashing to each clevis by passing the lashing through the clevis and through its own D-ring. Run each lashing through the D-ring on the top layer of missiles. Run each lashing to the rear of the plywood, and secure the lashings with two D-rings and a load binder. |
| 11 | 12 and 10A | Fit a lashing to clevis 12 by passing the lashing through its own D-ring. Run the lashing around the rear of the plywood and over the top of the missiles. Attach a D-ring to the free end of the lashing and secure it to clevis 10A with a load binder. |
| 12 | 10 and 12A | Fit a lashing to clevis 12A by passing the lashing through its own D-ring. Run the lashing around the rear of the plywood and over the top of the missiles. Attach a D-ring to the free end of the lashing, and secure it to clevis 10 with a load binder. |

*Figure 12-6. Lashings 8 through 12 installed*

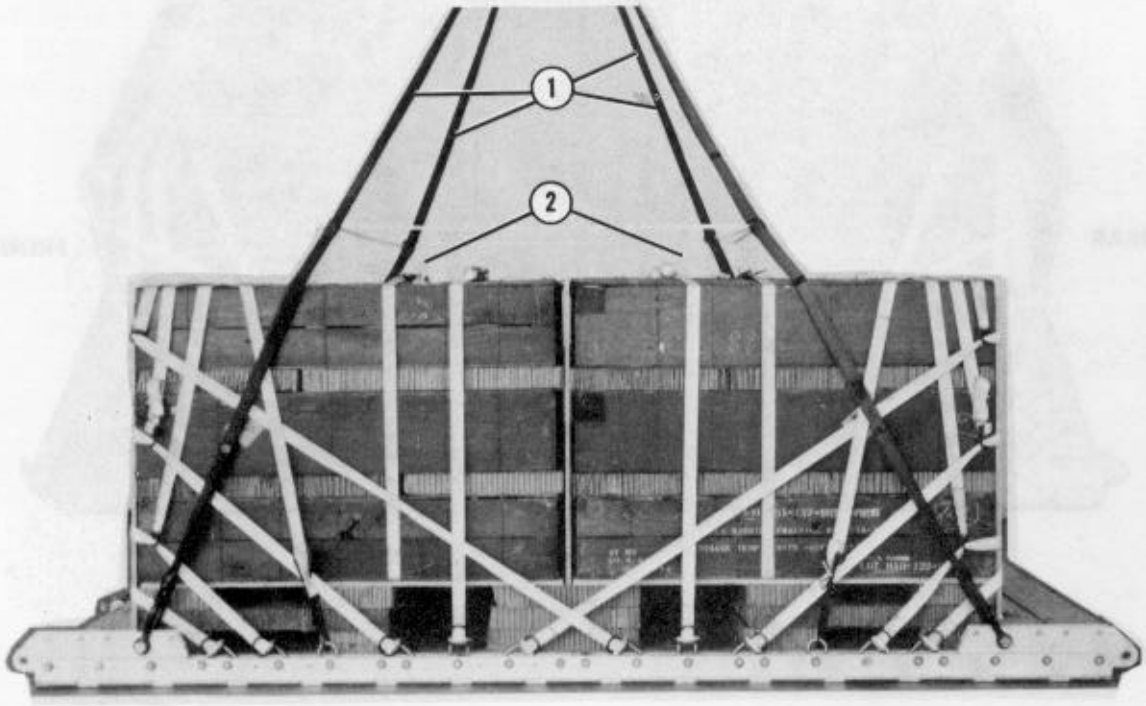



1. Secure lashings 3, 4, and 5 and 8, 9, and 10 in two places with type III nylon cord.
2. Secure lashing 6 to lashing 12 with type III nylon cord.
3. Secure lashing 7 to lashing 11 with type III nylon cord.

*Figure 12-7. Lashings secured*

### 12-6. Attaching and Safetying Suspension Slings

Install the suspension slings using four 12-foot (2-loop), type XXVI nylon webbing slings and four large clevises. Attach the suspension slings to the load as shown in Figure 12-8.



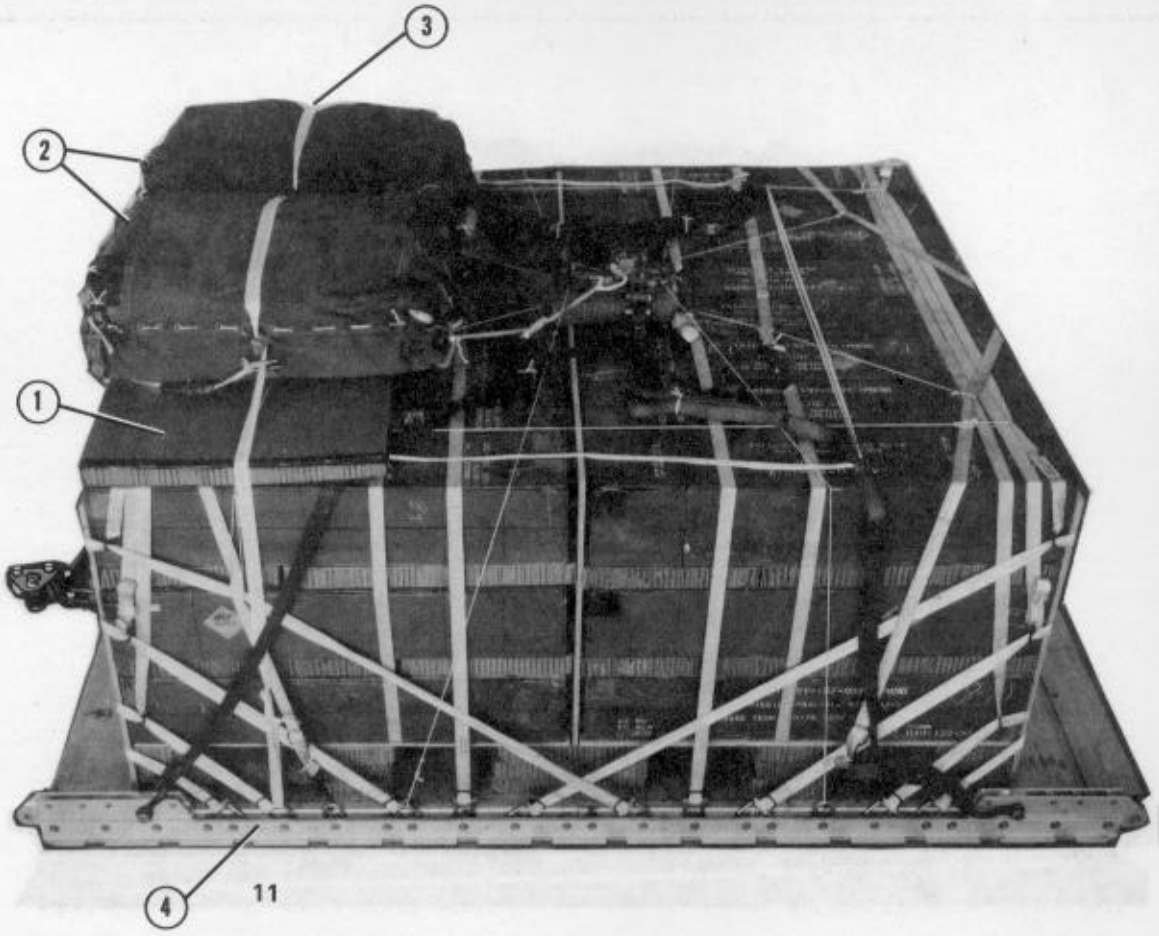

(1) Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each of the four tandem links using a large clevis. Raise the suspension slings above the load.

(2) Install the deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5 using two lengths of 1/2-inch tubular nylon webbing.

*Figure 12-8. Suspension slings installed*

## 12-7. Installing Cargo Parachutes

Prepare two G-11A or two G-11B cargo parachutes as outlined in FM 10-500-2/TO 13C7-1-5. Stow them as shown in Figure 12-9.




(1) Place a 36- by 96-inch piece of honeycomb across the top rear of the load. Tie the honeycomb in place with type III nylon cord. Tape the honeycomb edges where the type III nylon cord touches.

(2) Position two G-11A or two G-11B cargo parachutes on top of the honeycomb.

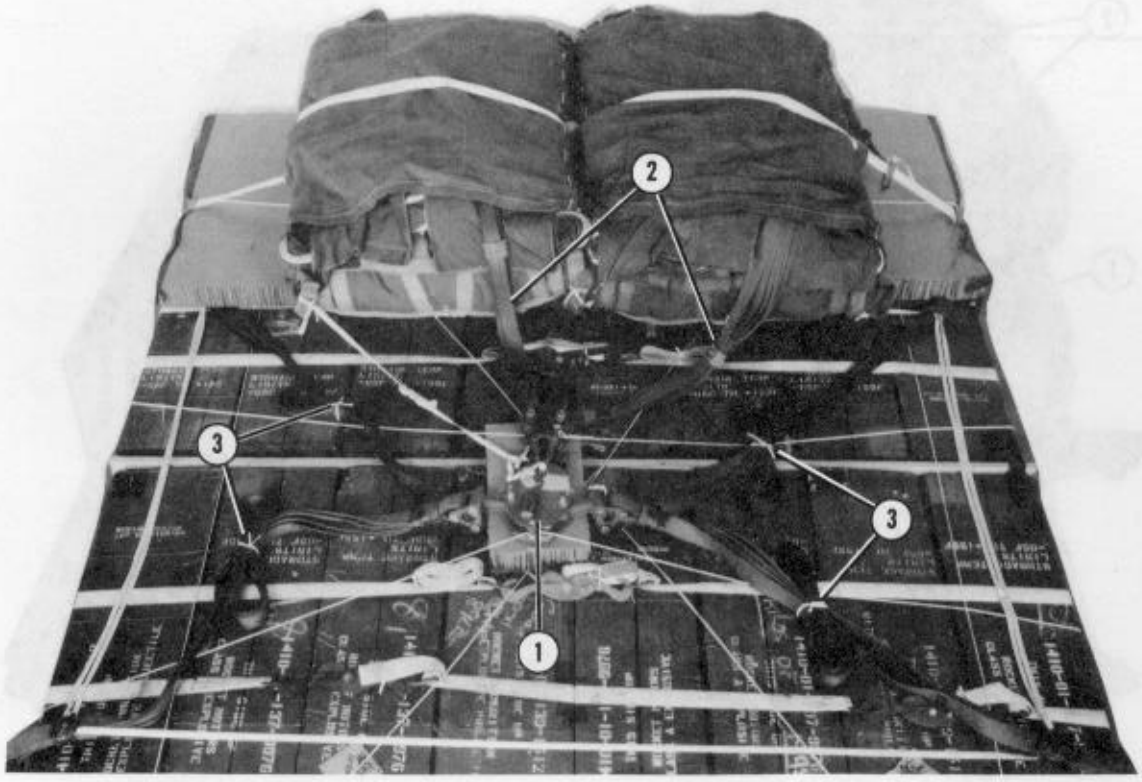
(3) Use a 10-yard length of type VIII nylon webbing to restrain the parachutes.

(4) Tie the restraint strap to clevises 11 and 11A.

*Figure 12-9. Cargo parachutes stowed*

### 12-8. Installing Release System

Install and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 12-10.




(1) Center a piece of honeycomb on top of the load and place an M-1 cargo parachute release on the honeycomb. Attach the parachute risers and suspension slings.

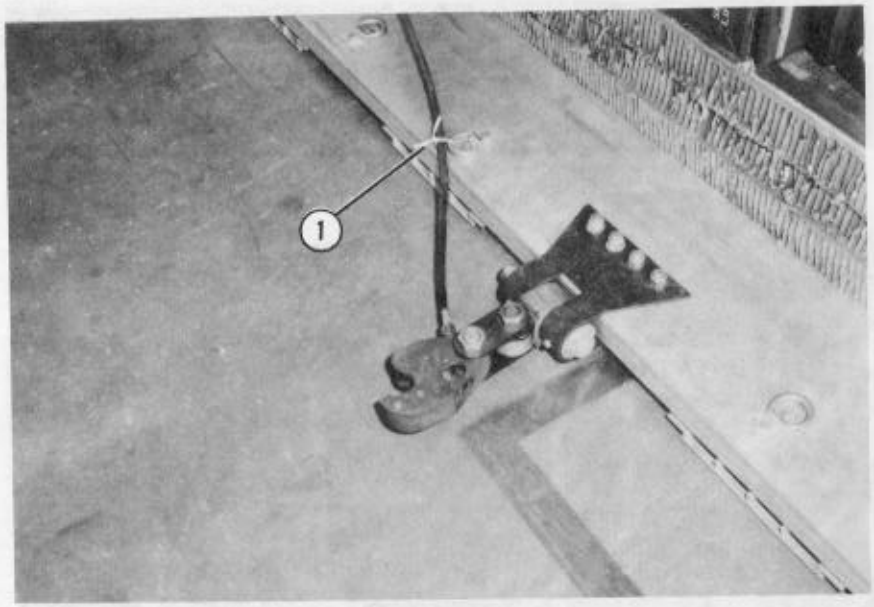
(2) Fold any excess parachute risers, and tape the folds in place.

(3) Fold the excess suspension slings, and tie the folds in place with 80-pound cotton webbing.

*Figure 12-10. M-1 cargo parachute release installed*

### 12-9. Installing Extraction System

Use the EFTC extraction system for this load. Install the EFTC brackets on the left rail of the platform. Use the first pair of EFTC bracket mounting holes on the platform front end. Install the components of the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 12-11. Use a 9-foot (3-loop), type X or a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line.




(1) Safety the cable of the EFTC to tiedown ring C6 using 80-pound cotton webbing.

***NOTE: It may be necessary to loosen lashing 3 to mount the EFTC actuator onto the bracket.***

*Figure 12-11. Extraction system installed*

### 12-10. Placing Extraction Parachute

Place the extraction parachute as described below.

**a. C-130 Aircraft.** Place an unreefed 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

**b. C-141 Aircraft.** Place an unreefed 15-foot cargo extraction parachute with a 36-inch adapter web and a continuous 160-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

### 12-11. Installing Emergency Restraints

Install a medium clevis in the front hole of each tandem link as an emergency restraint.

### 12-12. Marking Rigged Load

Mark the rigged load as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 12-12. Complete DD Form 1387-2, and securely attach it to the load. If the load varies from that shown, the weight, CB, and parachute requirements must be recomputed.

### 12-13. Equipment Required

Use the equipment listed in Table 12-1 to rig this load.


*Figure 12-12. Missiles in boxes rigged for low-velocity airdrop on a type V airdrop platform*

*Table 12-1. Equipment required for rigging missiles in boxes for low-velocity airdrop on a type V platform*

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| 4030-00-090-5354 | Clevis, suspension, 1-in (large) | 8 |
| 4020-00-240-2146 | Cord, nylon, type III, 550-lb | As required |
| 1670-00-434-5783 | Coupling, airdrop, extraction force transfer w 12-ft cable | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 5365-00-937-0147 | D-ring, heavy-duty, 10,000-lb | 30 |
| 8305-00-958-3685 | Felt, 1/2- by 6- by 6-in | 1 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing (for C-130) or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (for C-130) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing (for C-141) | 1 |
| 1670-00-783-5988 | Link assembly, type IV (for extraction line) | 1 |
| 1670-00-217-2421 | Link, L-bar type | 2 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in: | 18 sheets |
| | 10- by 34-in | (4) |
| | 22- by 48-in | (8) |
| | 36- by 48-in | (8) |
| | 36- by 96-in | (1) |
| | 76- by 10-in | (4) |
| | 96- by 10-in | (8) |
| | 96- by 20-in | (3) |
| 1670-01-183-2678 | Panel, sling, extraction line | 2 |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 2 |
| | Cargo extraction: | |
| 1670-01-063-3715 | 15-ft (unreefed) | 1 |
| | Platform, AD, type V, 12-ft: | |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | 1 |
| 1670-01-162-2374 | Outside EFTA | 1 |
| 1670-01-162-2385 | Bumper, nose | 1 |
| 1670-01-162-2372 | Clevis, load tiedown | 24 |
| 1670-01-162-2376 | Extraction bracket assembly | 1 |
| 1670-01-162-2381 | Tandem link | 4 |
| 5530-00-128-4981 | Plywood, 3/4-inch: | |
| | 42- by 96-in | 1 |
| | 48- by 58-in | 4 |
| | 48- by 96-in | 2 |
| 1670-01-097-8816 | Release, cargo, parachute, M-1 | 1 |

*Table 12-1. Equipment required for rigging missiles in boxes for low-velocity airdrop on a type V platform (continued)*

| National Stock Number | Item | Quantity |
|---|---|---|
| | Sling, cargo, airdrop: | |
| 1670-00-753-3631 | 9-ft (3-loop), type X nylon webbing or | 1 |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 1 |
| 1670-00-823-5041 | 12-ft (3-loop), type X nylon webbing or | 4 |
| 1670-01-062-6303 | 12-ft (2-loop), type XXVI nylon webbing | 4 |
| 1670-00-753-3794 | 20-ft (2-loop), type X nylon webbing or | 2 |
| 1670-01-062-6302 | 20-ft (2-loop), type XXVI nylon webbing | 2 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft, 10,000-lb | 30 |
| 1670-01-062-6312 | Web, adapter, 36-in | 1 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, 80-lb | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, 1,000-lb, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII, 3,600-lb | 10 yd |

# GLOSSARY

**abn** airborne

**ACB** attitude control bar

**AD** airdrop

**AFB** Air Force base

**AFR** Air Force regulation

**AFTO** Air Force technical order

**AR** Army regulation

**attn** attention

**CB** center of balance

**d** penny

**DA** Department of the Army

**DD** Department of Defense

**diam** diameter

**EFTC** extraction force transfer coupling

**FM** field manual

**ft** feet/foot

**gal** gallon

**HQ** headquarters

**in** inch

**LAPE** low-altitude parachute-extraction

**LAPES** low-altitude parachute-extraction system

**lb** pound

**LV** low-velocity

**MRE** meal, ready-to-eat

**no** number

**NSN** national stock number

**op** operation

**PEFTC** extraction force transfer coupling (platform)

**SL/CS** static line/connector strap

**TM** technical manual

**TO** technical order

**TOW** tube-launched, optically tracked, wire-guided

**TRADOC** United States Army Training and Doctrine Command

**US** United States

**w** with

**yd** yard

# REFERENCES

These documents must be available to the intended users of this publication.

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